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The Emotions and Cursive Writing

CYRIL C. O'BRIEN
Professor of Education, Marquette University
Milwaukee, Wisconsin

THE analysis of handwriting has had a long and interesting history. Writers and poets of the caliber of Edgar Allan Poe, Sir Walter Scott, Robert Browning, and Goethe have been counted among the students of the art, meaning, and interpretation of calligraphy. While much that has been written in the past under the heading of graphology savors of the pseudoscientific, today there is an approach to the subject of handwriting analysis that is both empirical and practical.

Modern treatment of the assessment of personality from handwriting and the identification of handwriting includes the names of Ludwig Klages, M. N. Bunker, C. H. Fletcher, Joseph Zubin, F. M. Miller, T. S. Lewinson, Max Pulver, H. J. Eysenck, and many others. It is true that handwriting analysis has not been satisfactorily validated scientifically. Yet there is evidence to justify its use in a psychological setting. This is particularly so in appraising certain aspects and degrees of human feelings and emotions.

Depths of Emotions

My first acquaintance with the analysis of handwriting on an experimental basis was concerned with the evaluation of the strength of emotions, broadly conceived. A cross section of one thousand examples of pen-and-ink handwriting was personally studied for width of stroke and degree of slant.

The assumption was made that the greater the pressure exerted on the nib of the pen, the deeper and stronger were the general emotions of the individual. Of course, the fineness of the nib would have to be considered in making such an appraisal. Curiously enough, a person with very strong feelings will press heavily even on a fine-pointed nib. This pressure will spread the prongs and normally will give greater width to the strokes. An individual of less intense emotions usually will write lightly. The hand guides the pen, but the brain dictates the emphasis on the letters.

Depth of emotion can be gauged by comparing with a microscope the relation of the width and shading of the upstrokes to the width and chiaroscuro effect of the downstrokes. The upstrokes often show comparatively little pressure, while the downstrokes are more pronounced.

Among the one thousand specimens of handwriting, one sample of very deep emotions stands forth. I knew the man personally. He was a surgeon of repute in a small town. To all outward appearances, he was always the personification of calmness. His handwriting was very heavily shaded. He broke

the nib of many a borrowed pen, but graciously made restitution. His overt behavior could not be reconciled with his heavy handwriting.

The enigma was clarified once when he made his customary monthly call to collect the rent from one of his tenants. Entering this home, a scene of devastation met his eyes. Using a rubber vacuum plunger, the children had all but denuded the walls of plaster. His reaction was immediate. In common parlance, he "blew his top." He displayed an emotional phase of his personality that had been concealed for years even from those who best knew him. He had very strong feelings but constantly stifled them.

Expression of Emotions

The rationale underlying the measurement of the expression of emotions as revealed in cursive writing involves the slant of the strokes. Factors such as early handwriting training and experience influence the slope of letters, yet there are data to substantiate the strong relationship between the degree of letter slant and the emotions.

In a large cross section of handwriting examples, the results of measuring the letter slant with a simple protractor will run the gamut from 170° to 90° to 20°. The vertical writing frequently discloses a controlled expression of legitimate emotions, while a 20° first quadrant slant often indicates a case of hysteria.

Cursive Writing in School

While children are introduced to manuscript writing in the first grade, the transition to cursive writing commonly is made soon after, seldom later than the beginning of the fourth grade. At present, there is no uniform agreement on how long the manuscript style should be taught or exactly when the change to cursive writing should be made. Since there are individual differences among children in mental, psychomotor, and emotional growth, it would seem that each case should be decided in the light of all variables.

Research Workers

Over the years a significant literature has been classified, although it is characterized by wide chronological gaps. The names of Binet, Thorndike, Ayres, Frank N. Freeman, Leonard V. Koos, Arthur I. Gates, Paul V. West, Louise B. Ames, Thelma G. Voorhis, Gertrude Hildreth, and Luella W. Cole are prominent among those who have made positive contributions in the field.

Current research under the leadership of Virgil E. Herrick and Theodore L. Harris of the University of Wisconson is producing promising results.

Our Present Authors

Various phases and concomitant aspects of cursive writing are presented in this issue by Brother Bernard Peter, Dr. Nick John Topetzes, Dr. Wesley E. Scott, Dr. Ella Callista Clark, Mr. Philip Perlson, Dr. Lawrence J. Coughlin, and Dr. Rosa C. Veal.

It is hoped that the experiences of these writers will prove invaluable to teachers and others in their search for sound principles and new pedagogic techniques.

Modern Concepts of Handwriting

NICK JOHN TOPETZES
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BRIGHT or slow, right- or left-handed —most pupils today do not strive for beautiful effects in handwriting. They write merely to convey thought in a composition or to preserve thought in a notebook, or to serve other similar needs. With a typewriter displacing handwriting, schools now have less incentive to stress handwriting than they had formerly.

Even so, schools still place great emphasis on writing, requiring children to learn to write in order to do other schoolwork expected of them. Furthermore, schools are obligated to prepare children to write sufficiently well to satisfy their adult needs in the business and social worlds. Thus handwriting becomes a tool and is not an end in itself. Rather it is a functional activity that enables individuals to achieve numerous goals associated with everyday living.

By and large, schools today look upon handwriting as one of the language arts. They consider it a means of communication, a means of expressing meaning. Accordingly, if proper methods are used, it becomes a smoothly working and efficient means of expressing thought.

Legibility and Speed Important

Classroom teachers today are concerned more with what pupils write than they are with the quality and speed of writing. They regard writing as an activity which must be accompanied by thought and purpose—otherwise the writing becomes meaningless.

The chief goal in handwriting is not beauty, but legibility. Most children learn to write quite legibly by the end of the third grade. From this time on they need chiefly to develop speed in handwriting. Generally they pick up speed through the functional use of handwriting by using it to carry on varied purposeful activities.

There is no way of telling how much emphasis should be placed on speed in comparison with legibility. Certainly speed cannot be neglected; yet, in the final analysis, the features of good handwriting are best described in a qualitative sense rather than in a quantitative sense.

Handwriting is a highly individual matter, and many persons seem to reflect their personal characteristics in their handwriting. Some naturally achieve better legibility than others, and some naturally achieve greater speed than others. Therefore, the entire handwriting program is greatly affected by individual differences.

Motivation Necessary

Handwriting cannot be taught successfully by incidental methods. It must be taught by means of a developmental program the same as other areas in the

curriculum must be taught. The teacher must plan her developmental program in writing as carefully as she plans her developmental program in reading, arithmetic, or social studies.

One of the most important factors in handwriting is motivation. If a child is properly motivated to learn to write, he is likely to enjoy writing and to make good progress in writing. On the other hand, if he is not properly motivated, he is likely to dislike writing and to fail to learn to write well. Actually the child must be motivated not merely to learn to write but also to attain excellence in writing, for only in this way is he likely to achieve legibility in writing. Strong motives must prevail in the handwriting program. Children must be constantly stimulated to attempt to attain high standards in writing.

Many Kinds of Incentives

There are many kinds of incentives that a teacher may use to motivate pupils in handwriting, some natural and some artificial. Obviously, natural incentives are far better than artificial incentives, although both may be used to advantage.

The best incentive is the actual desire to make handwriting a useful part of living. If the child comes to find that he can make good use of writing, he is likely to want to learn to write and to achieve good quality writing. For instance, when he writes a letter to a relative or friend, he finds that writing is worth while and that he can have fun writing. At the same time, he is likely to develop pride in writing.

Another incentive to good handwriting is competition, employed in many classrooms. Children are encouraged to write more legibly and faster than their classmates, merely to attain better standing or greater recognition. One advantage in using competition as an incentive is the fact that it gets at the real problem itself—the problem of achieving quality handwriting.

Some psychologists and teachers question the use of competition as a motive. They feel that it is undesirable to encourage children to win over their classmates, that this is undemocratic. They argue that emphasis should be placed on the value of writing itself rather than on attempting to surpass others. Most authorities, however, agree that competition is desirable, if employed moderately, as in conjunction with other incentives. A group of children, for instance, may be stimulated to carry on a certain project that requires handwriting. Then each child feels obligated to do his part of the project well.

There are many artificial incentives that a teacher may use to encourage good handwriting, some of which are quite effective. Among these artificial incentives is the possibility of winning awards, such as certificates, diplomas, marks, stars, seals, stamps, buttons, pins, and ribbons. Here again these awards are helpful, because they get at the real problem of achieving quality handwriting.

The Problem of Handedness

The present concensus of feeling regarding handwriting is that it depends to a great extent on an individual's mental, emotional, and physical characteristics. Already we have touched on motivation, which calls into play the mental and emotional characteristics of a

child. Now let us consider the question of handedness, which, although a physical factor, may involve both mental and emotional factors as well.

Most pupils have right-handed dominance—they use their right hands more readily and efficiently than their left hands. A few pupils have left-handed dominance—they use their left hands to do what most persons do with their right hands. Most writing programs are keyed to right-handed children. Thus naturally the question arises: How shall schools teach left-handed children to write?

Some years ago it was thought that there is grave danger in forcing a left-handed child to use his right hand. There seemed to be evidence that forcing a left-handed child to use his right hand brought on speech defects, with accompanying emotional disturbances. Recent research, however, provides little evidence to support this belief. In a certain midwestern elementary school where left-handed children were taught to write with their right hands, not a single case of defective speech could be traced to reversal of the manual habit. Today it is generally understood that once a child's speech habits are fairly well established, as at the age of eight, there is relatively little danger in encouraging or even in forcing him to reverse his handedness in writing. There is no more danger in teaching a left-handed child to write with his right hand than there is in teaching a right-handed child to write with his left hand.

This is virtually a right-handed world; hence, left-handed persons always face disadvantages. Most of the objects and instruments which children use in schools are designed for right-handed children. Even the seats in the classroom are arranged so that the light will fall over the shoulders of right-handed pupils.

Even so, both teachers and parents doubtless have given too much attention to the problem of handedness. Research findings indicate that much of this attention is unwarranted.

Individual Difference

Handedness is a form of individual difference—it is a natural and inherited trait. Many psychologists believe that handedness depends on cerebral dominance—that the left hemisphere is the brain center for right-handed persons and the right hemisphere for left-handed persons; yet this dominance by the brain hemispheres has never been definitely proved. At any rate, it is certain that a high percentage of persons inherit the tendency to be right-handed and a low percentage the tendency to be left-handed.

Years ago teachers assumed in teaching handwriting that all children were right-handed. They placed handwriting books on all pupils' desks in the normal position for right-handed children and expected left-handed children as well as right-handed children to write from this position. Some left-handed children in whom the dominance was not especially strong actually learned to write with their right hands. Other left-handed children who could not overcome the dominance learned to write awkwardly with their left hands—many from a kind of overhand position. It generally was expected that a person who wrote with his left hand would never write well.

Some teachers attempted to make all

left-handed children write with their right hands. Others merely let the left-handed children shift for themselves. Today it is felt that the teacher should determine first of all what is best for the child.

Preliminary Testing Important

The modern approach to the problem of handedness is to give the child preliminary tests to determine his handedness before teaching him to write. Special tests have been devised for this purpose—some may be administered by teachers, but others must be administered by school psychologists or other especially trained persons.

If special tests cannot be used, teachers should try to determine hand dominance by watching children carry on simple activities in the classroom. For instance, she may observe which hand a child uses in carrying on such activities as cutting paper, tracing with a pencil, picking up blocks, hammering a nail, throwing a ball. In case a child uses his left hand to do these things, she may ask him to try to do some of the same things with his right hand. If he can do them fairly well, the chances are that he may be taught to write with his right hand, but if he does them very awkwardly, he should be taught to write with his left hand.

In case a child is taught to write with his left hand, special provision should be made for him in the classroom. He should be taught to place his paper in the right position for writing with his left hand. He should be taught how to hold his pencil. If he is emotionally disturbed about writing with his left hand, he should be reassured that this is no disgrace, and, if his parents are emotionally disturbed, they should be reassured, too. Sometimes parents insist that their children, even though strongly left-handed, be taught to write with their right hands. When this happens and a teacher attempts to help a left-handed child to change his handedness, she must exercise great patience and proceed very quietly and methodically. Often the scolding, nagging, and punishing that accompany such a change do more damage to the child than the change itself.

To summarize on handedness: Natural handedness should be determined early before a child learns to write. If a child is right-handed, of course, or ambidextrous, he should be taught to write with his right hand. If he is left-handed but his left-handed tendencies are not strongly pronounced, he probably also should be taught to write with his right hand. However, if his left-handed tendencies are strong, he should be taught to write with his left hand. Once the proper handedness has been decided upon, it should be trained, not left to chance. Delay in training may lead to many defects in writing, especially mirror writing and reversal of characters.

If a man has a talent and cannot use it, he has failed. If he has a talent and uses only half of it, he has partly failed. If he has a talent and learns somehow to use the whole of it, he has gloriously succeeded, and won a satisfaction and a triumph few men ever know.

—Thomas Wolfe, *The Web and the Rock*

Handwriting in Philadelphia's Secondary Schools

WESLEY E. SCOTT
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THE second "R" of the "three R's"—handwriting—was a casualty of the economy wave of the middle thirties and of the change in educational thinking which, to a large extent, eliminated the teaching of handwriting. Evidence accumulated in recent years revealed a steady deterioration in this skill throughout the country. Business men, parents, and teachers were becoming increasingly vocal in their complaints about the poor handwriting of many secondary-school graduates.

The author was in a sensitive spot to receive complaints about business losses due to poorly written sales slips, accounting records, and other basic business forms. One employment manager showed him job applications which were completely illegible and asked, "Why can't you people do something about this?"

A handwriting evaluation committee considered these facts and concluded that, after the elementary grades, there was a complete lack of attention given to handwriting in the instructional program. This neglect and the need for more and faster writing in the secondary grades were factors contributing to poor handwriting. Moreover, many teachers were unable to help students because they, too, had no handwriting training. This situation was by no means unique to Philadelphia.

The First Steps

Steps were taken to reverse the trend. Two experienced business education teachers were assigned to work under the author's direction in developing and supervising a handwriting-improvement program, to begin with commercial classes. They first worked with the elementary-school language-arts committee and its subcommittee on handwriting.

As one result of this collaboration, a uniform alphabet system was developed and adopted for grades three to twelve. The formation of the capital letters particularly was based on their studies, showing that pupils tend to simplify certain letters and to form others poorly. Alphabet perception strips were distributed to all elementary and secondary schools. An investigation was made of existing handwriting practices, methods, programs, and available materials in secondary schools. It was found that new approaches had to be developed. These were tried out experimentally in a program set up in three junior high schools and three senior high schools in September 1955.

The techniques, devices, and teaching materials subsequently were refined in the light of experience. Included were new handwriting manuals for students with teachers' guides, special

ruled paper, slant guides, and various remedial sheets. To motivate the students, several series of original cartoon posters were issued. One particularly effective motivating device was a progress sheet which provided space for successive sample writings. This device enabled teachers and students to evaluate progress.

The Program

The program of instruction that has evolved is diagnostic and remedial. The student writes, at his normal speed, a number of sample sentences, each of which he analyzes with respect to an element of good handwriting. He is assisted in his diagnosis by specific information about each element. These are the elements which are considered: slant, size, alignment, spacing, and letter formation. Letter formation includes beginning and ending strokes, loops, rounded turns, closings, and retraces.

Adequate remedial work is provided for each of these elements. The practice work consists of letters, syllables, words, and sentences, rather than the overlapping ovals and tedious drills.

Many teachers at first were uncertain of their ability to teach remedial handwriting. However, as they worked with the program, their confidence was established. They were assisted by demonstration lessons, visual aids, motivational and instructional materials, and supervisory assistance with problems of individual students. A booklet has been written to help teachers with their chalkboard writing. In addition, teachers have been given in-service training in handwriting instruction through faculty meetings, courses, and curriculum conferences.

There is, at present, a general awareness of the value of good handwriting. Examinations for certain commercial-teaching positions now contain questions about handwriting instruction, and poor handwriting is subject to penalty in grading. Chalkboard-writing ability must be demonstrated.

Public Interest

General public interest has been stimulated further through television and radio appearances and through motion-picture and slide presentations to various civic groups.

There has been a rapid expansion of the handwriting program since its inception in September 1955. At present, students in the commercial course of all of the junior, senior, and vocational-technical schools get remedial instruction for at least one term. Many teachers in core classes and in academic subjects have received help; they are now giving handwriting instruction to their students. In English classes, booklets have been made available to students who need improvement on an individual basis.

What has been the business men's attitude toward the program? They were so delighted that they asked for a business-writing clinic. More than a hundred representatives of business and industry participated in a four-session course. Recently, a group of police officers attended a handwriting clinic. No, they did not want help in writing-traffic tickets. They wanted to improve their chalkboard presentation in a school public-relations project. Other diverse groups, consisting of nurses and store personnel, have also received handwriting instruction.

The program has received widespread attention in the press and among business people and educators. While no claim is made to generally spectacular results, in many cases there has been a dramatic improvement in handwriting. Students now can locate their own weaknesses and do something to correct them. Teachers, too, can do more than demand that poorly written papers be rewritten. No longer do students complain, "All my teachers tell me that my writing is terrible, but none shows me how to improve it." Teachers can and do point out what needs correction and can suggest ways to improve.

All who are working in the program are happy that a direct and effective attack has been making headway in a field that has been neglected too long.

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Legible Handwriting—Here's How

ELLA CALLISTA CLARK
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WITHIN the next few days you may be called upon to demonstrate your handwriting in a situation in which the quality of your performance may, at least to some degree, spell success or failure economically, socially, or professionally. When you write a job application, a form, a letter, or a memorandum, you reveal a considerable amount of information about yourself. Handwriting is an expression of individuality, as are your bearing, facial expressions, and your voice. Occasionally, your handwriting may be the first contact you have with a person who is potentially important to you. If too poorly done, it also may be the last.

Recently, a well-recommended young man who had applied for a position was rejected with the explanation that his careless, illegible writing on the application blank had destroyed any confidence which the prospective employer might have had in his accuracy and carefulness. "But," vainly defended the rejected applicant, "today various types of machines have taken over the tasks formerly done by handwriting. Why should I be expected to demonstrate an obsolete skill?"

Let us be realistic enough to avoid laboring under the illusion that the typewriter, the printing press, or the addressograph replace handwriting. Such is not the case. In fact there are numerous and often critical situations in which legible handwriting is essential.

Etiquette dictates that many social missives must be handwritten. The salesman must write in his order book, and businessmen report huge losses every year due to illegible sales slips. The Dead Letter Office receives huge quantities of mail on much of which illegible handwriting has prevented delivery. Indeed, there are numerous occasions when each one of us needs to write—and to write so that others can read what we write. Besides, ability to write well can save us and others a great deal of time in many ways. If we expect to meet our business, social, and professional obligations effectively, the ability to write well and easily will help us materially. Therefore, handwriting skill is worth the effort it requires.

The Elementary School

Now, where do we start? Many people think of handwriting as a skill to be acquired in the elementary school. Therefore, first of all, let us consider how contemporary elementary schools usually provide for the development of the very important ability of writing legibly.

Schools in about 85 per cent of the larger cities teach children in the first two or three grades to do manuscript

writing. Proponents of this plan point out the greater ease with which children learn to write manuscript at the same time they are learning to read comparable print in their books. Thus beginners do not have to master two sets of letters (cursive and manuscript) right away. Instead, it is possible for children to concentrate on print alone and thus progress more rapidly in their reading. Furthermore, the simultaneously learned skill in manuscript writing enables children to write their own stories and letters sooner than if they had to learn cursive writing before tackling their own writing needs. The individual motivation supplied by this newly acquired independence often stimulates many children to put forth voluntary effort in reading practice. This is true, especially in situations where parents express appreciation of their children's growing ability to read and write, thereby encouraging them to move ahead under their own power.

Obviously, if a child in the primary grades is to learn to do legible manuscript writing, teachers in these grades must provide systematic and appropriate instruction and practice. Parents, too, need to know what is going on in this regard in school, for at this critical period in a child's life the home can and should supply needed assistance and encouragement toward legible handwriting.

In the second or third grade, the efficient teacher shows the child how to connect his manuscript letters, slant his paper at about a thirty-degree angle, and, thus, produce cursive writing. Here, too, this is a gradual process, requiring systematic teaching and supervised practice, based upon the individual needs of each child.

Legibility depends largely upon the formation of individual letters; consequently, the child needs careful guidance in making the letters so accurately that they can be unquestionably recognized at a glance. Since the small letters *a, b, d, e, h, i, n, r,* and *t* account for much of the illegibility in cursive writing, they merit special emphasis in the learning process.

Slant and size of letters, letter-spacing, word-spacing, and alignment also demand emphasis. The effective teacher of handwriting singles out each of these for concentrated attention.

Research Findings

According to Frank N. Freeman[1] in his resumé of research on handwriting and his consequent recommendations to teachers, the following matters are of great importance in securing desirable handwriting results. As is true in most acts of skill, legible handwriting is usually more readily produced when good posture and position are maintained. Ordinarily the best writing is most readily forthcoming when the writer sits up and squarely faces the desk. Both arms rest on the desk.

In manuscript writing, the paper is parallel to the lower edge of the desk; in cursive writing, the paper is placed at a thirty-degree angle to the left for the right-handed person or at the same angle to the right for the left-handed writer. Good slant depends largely upon this paper position. The hand should move easily on the last joint of the last two fingers. The pencil or pen

1. Frank N. Freeman, *What Research Says to the Teacher: Teaching Handwriting* (Washington, D. C.: National Education Association, 1954).

should be held lightly by the thumb and the first two fingers with the first finger on top, the second finger at the side and the same distance from the point, and the thumb above the first finger. The fingers should grasp the pen or pencil not less than an inch from the point. A combined finger and arm movement which permits easy progress across the page seems to produce the best writing.

While these specific suggestions concerning position and movement provide a valuable guide, Dr. Freeman does not advocate their inflexible application to every writer. Nor are today's teachers attempting to have children mechanically imitate a copybook style. On the contrary, the current emphasis upon meeting the handwriting needs of each person individualizes the writing instruction and practice periods and stresses writing as a major tool in life situations rather than as an isolated end in itself. No one needs to fear that attempts to improve the quality of one's writing need exact the sacrifice of individuality. Individuality is to be encouraged unless it impairs legibility.

Examination of papers submitted by children in elementary schools which have a good instructional program in handwriting usually reveals satisfactory legibility for most children. However, by the time these same children finish high school, frequently their writing reflects illegibility. This loss of legibility apparently results from undue haste and an obvious absence of pride in good writing.

A growing concern over this current inadequacy of writing is causing many parents and teachers to re-examine the entire twelve-year program to find the weak spots responsible for illegible handwriting. It seems that every individual should have the right to equip himself with the important ability of writing well enough to communicate accurately whatever particular life situations demand of him.

However, to accomplish this, we need to elevate the prestige of handwriting and to attack the writing problem on all fronts simultaneously. The elementary school needs to meet its obligations by providing a sound basic foundation in writing ability. At the same time, the secondary school, instead of permitting students to write hastily and carelessly, must hold up standards of legibility. Moreover, the favorable attitude of adults toward legible handwriting is, of course, of tremendous importance. Basic to all improvement in writing, however, is the inner drive of each individual to accomplish specific goals.

Effective Motivation

If a person has a strong desire to learn to write well, he is likely to make progress. If he takes pride in writing well, he will voluntarily put forth greater effort than if he feels that someone else is forcing him to attempt something the value of which he seriously doubts. Nor are skills readily acquired when they are divorced from meanings. Adults as well as children improve their writing by concentrating on achieving legibility in the specific writing tasks which they need to perform effectively. The child who is sincerely interested in writing an invitation to his parents to visit his classroom has a genuine reason for producing a creditable letter—particularly if he knows that his parents will exhibit some pride in his accomplishment. Furthermore, if the child

can see his growth over a period of time, this success will spur him on to further effort.

The intimate connection between writing and meaning has a profound effect on the writing act. Meaning and physical movement together make writing a means of communication rather than merely a few isolated strokes of a pen. A situation in which a person writes because he wishes to express himself harnesses a strong inner motivation. An individual writing a letter of application has a very practical need of making a well-organized presentation in his best handwriting. Parents would do well to enlist the efforts of children in assisting with certain functional home chores, such as making the laundry list, recording phone messages, or keeping certain necessary records.

One boy, whose parents encouraged him to keep the mileage and detailed expense record of a family trip, not only improved his writing greatly, but also developed skill in arithmetic and found new values in his schoolwork in general which he had previously neglected.

This does not imply that systematic practice is unnecessary. For example, tackling one difficulty at a time usually pays gratifying dividends when thorough teaching is available as it is needed and sufficient opportunity to practice under supervision is provided.

For example, correct body position while writing, method of holding the pen or pencil, and position of the material on which one is writing are definitely worthy of attention. Similarly, the basic elements of good handwriting which are slant, size, letter-spacing, word-spacing, alignment, and letter-formation need to be tackled systematically, one element at a time.

Elevating Standards

At one time the writer was a member of a college faculty to which was added a handwriting specialist whose particular responsibility was in the area of improving the handwriting of prospective teachers. However, the college president, sensing a broader potential, arranged to have the new handwriting specialist present to the entire faculty the importance of legible handwriting for everyone, especially emphasizing the fact that with even a small amount of carefully directed effort any individual, regardless of age, can improve his writing considerably.

The resultant interest motivated several faculty members to tackle the matter of self-improvement and with most satisfying results. In each case the handwriting specialist gladly helped the individual to assess his own particular needs and to plan a constructive attack on his own errors. Regular but brief periods of practice produced rapid and gratifying improvement.

This improvement on the part of faculty members was also accompanied by an upgrading of their requirements for papers submitted by students. A positive attitude toward the importance of equipping oneself with handwriting skill further contributed to a growing awareness of the tremendous value of legible handwriting for everyone.

Similarly, other adults who wish to put their best hands forward, by some well-directed effort, can enhance their capability in this direction and, thus, reap the many benefits which legible handwriting commands. However, the child who learns to write legibly from the start equips himself with this valuable skill for his entire lifetime.

Penmanship Banner Contests

BROTHER BERNARD PETER
Community Supervisor of the Brothers of the Christian Schools
New York, New York

WHEN the Brothers of the Christian Schools came to New York over a hundred years ago, they were invited to administer the boys' departments of many of the parochial schools. Necessarily, these were elementary schools, since few high schools existed in those days. As a result, much of the work of the Brothers was done in what is now termed the junior-high-school years.

From the very outset, the Brothers had their schools very well organized. Two factors were responsible for this: (1) the proximity of the schools (most of them were in the New York City area), and (2) the nonexistence of school boards or the limited scope of the existing boards.

Consequently, the Brothers provided their own course of studies, wrote most of their own textbooks, and conducted their own interschool competitive examinations. These practices unified their school system, established standards, and made the exchange of teachers an easy matter.

With the advent of organized school boards, especially on the diocesan level, the Brothers' course of studies and program of examinations were replaced by the curricular and testing programs of the broader diocesan-wide system. Also, with the increased interest among publishers in the Catholic textbook field, the Brothers yielded to professional editorial staffs and adequate budgets.

Regardless of these changes, the Brothers continuously have striven to maintain high standards. Annual contests in arithmetic, spelling, and public speaking have been continued through the years. The Brothers' competitive examinations, though, were discontinued in the early thirties, being replaced by diocesan examinations. However, a decided decline in penmanship was noted in the schools after these tests were discontinued. At the request of the principals of our schools, the penmanship banner contests were revived in the late thirties.

Handwriting Contests

Here is how the contests are conducted. Twice a year the Supervisor calls for a sample of each pupil's writing. Each child is required to write a statement which has been taken from his grade matter. These statements, selected by the Supervisor, are sent to each school in a sealed envelope, to be opened at a certain time on a designated date. In this way, neither teachers nor pupils know what will be required. Each pupil writes the statement once and places his name on the bottom of the page.

These papers are sent to the Supervisor's Office for rating. The per cent on each paper constitutes only half of the final mark. The other 50 per cent is assigned by the Supervisor on his visit to the school, where he rates each pupil's homework and composition book.

In other words, the pupil's daily work is evaluated and considered along with the written statement.

The individual grades then are compiled to form both class and school averages. The school with the highest average is given a banner to display, designating it as the Banner School. In addition, the class with the highest average in each school is given a pennant to display in its classroom, and the results of the competition are published among the schools. The teachers and the schools compete eagerly for these honors.

In 1957, interschool competition was discontinued to allow the contest to be conducted within each school, and, thereby, to permit more classes to win and display the banner of excellence in penmanship. Somehow the competitive feature was lacking in this arrangement. The quality of penmanship dropped to such a low level that, in 1958, we returned to the interschool competition.

Handwriting Instruction

As a result of the Supervisor's evaluation of the written work of students, a definite weakness in the teaching method of writing was noted. The general practice of many teachers was to require children to copy a model from the board or from a penmanship book. Such imitation, we felt, did not produce good handwriting. Specific instruction was lacking. Therefore, we developed a simple program, based on the following principles: Children write for the purposes of conveying ideas; hence, legibility is of the first importance. The key to legibility lies in the proper formation of letters. Not only will the writing be legible if every letter is properly formed, but also it will be beautiful.

Today, teachers attempt to instill in their pupils an interest in better writing —and this interest is enhanced by the penmanship banner contests. Moreover, teachers now demonstrate how each letter is formed, giving specific attention to details, such as the height and width of letters, length of ascenders and descenders, similarities between letters, where the *t* should be crossed, etc. And, of course, the children are required to practice letter formation, rather than to copy or imitate a model.

In our handwriting program, then, directions are specific, letter formation is demonstrated and practiced, and interest in better handwriting is fostered through the competitive banner contests. In evaluation, we must conclude that this program of handwriting instruction has been most successful.

BOOK REVIEW

IMPROVE YOUR HANDWRITING. By Claire Trieb Slote. Foreword by Dr. Frank Freeman. N. Y. McGraw-Hill. 1958. $3.50.

This easy-to-read book is a compact presentation of social, economic, and personal reasons for everyone's achievement of legibility of handwriting and ways of accomplishing this end "easily and quickly." While the author frequently refers to handwriting research, she provides little or no documentation. Nevertheless, parents and teachers may make appropriate use of this book in encouraging young people to develop a legible handwriting, which will be of tremendous value to them throughout life. The author's lightness of style should encourage the reader to attack his handwriting problems with confidence.—Ella Callista Clark.

Board-Writing Problems of New Teachers

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ONE thing that has never been taught in a teachers' college or a school of education is the wonderful feeling of power and incipient creativity that comes over the new teacher as he surveys his new room for the first time and sees that wide expanse of chalkboard. Ah! Now he can write! He can put things up there for the students to see. He may not have had this emotion steal over him in such degree since the time he was two and simultaneously discovered the can of shortening and the wallpaper.

But soon a counter emotion may arise after he has put his first message on the board. For the new teacher may find that what he has written and the way in which he has written it may not meet the standards imposed by the two axioms of board writing: (1) the students have to read it; (2) the students may copy it.

Writing Problems

The new teacher may find with dismay that his writing cannot be easily read by the children, because it is not very legible, or because his style and letter form are different from the ones to which they are accustomed. He may even be embarrassed to find, as he steps back to admire his production, that it starts in the northwest corner of the board and ends up in the southeast—i.e., the lines have a pronounced slant.

Even more dismaying, sometimes, is the discovery that the faults enumerated above may be viewed by the students as evidence of admirable individuality, and soon there is a rash of imitations seen in the written work they hand in.

Acceptable and satisfactory board writing is an often-overlooked area of teacher training, and those of us who work in teacher education (both undergraduate and graduate) are many times called upon to help beginning teachers (or beginning student teachers) to improve their writing.

Factors in Readability

Whether or not writing on the board can be read by the students for whom it is intended depends on legibility, style, form, size, regularity, and spacing. These factors, of course, are interrelated, but for purposes of discussion we shall consider them separately.

Legibility means that a word can be recognized for the word the writer intended to put down. As we become more skilled in reading, we find that even poor writing can be reasonably legible to us; and, as we become familiar with a certain individual's writing, we may find it perfectly legible even though it is incomprehensible to others.

Hence, legibility means, "This writing can be read." But the new teacher cannot hope that he can wait for the students to get used to him. His writing has to be legible from the start.

Style is concerned with whether the writing has many curlicues or is relatively plain, whether the letters and words seem to slant or seem to be straight up and down. Style is closely related to letter form, or the way in which individual letters are made. Too many flourishes and uncompleted letters detract from legibility, as do letters that are simply made but are similar to other letters.

Size is important in board writing, for the pupils in the back of the room cannot possibly see writing the size of which is more suited to paper than to the board. On the other hand, writing that is too large is not economical of space, and it causes eye and head movements that are fatiguing; moreover, it can make the reader lose the sense of what is written.

Regularity and spacing have to do with whether or not letters are even, words are about the same distance apart, and lines of writing are separated enough to contribute to readability. Letters that are of varying sizes, words that run together, and lines that seem to blend from a short distance away increase the students' problems when they try to read what the teacher has written on the board.

Sometimes, as noted above, the new teacher (and even the old one) may make letters a certain way, or may use circles as dots for the *i*, or do something else that a student may think is clever or different. While this may not be particularly harmful, it poses a real problem when the teacher attempts to correct the pupil without correcting the model he has unintentionally supplied.

These, then, are some of the problems new teachers have when they start to do board writing.

Board-Writing Aids

These problems, however, can be countered somewhat by measures suggested by many supervisors of student teachers and new teachers.

The most obvious aid to good board writing is to draw faint lines on the board to guide the beginner in keeping the written sentences on an even keel. These lines further aid him by acting as suggested guide lines for the height and size of the letters.

Another thing advocated by many supervisors is that the new teacher procure a copy of the handwriting book or compendium used by the children. This has several advantages for the teacher. It shows him, of course, what system of writing the children are using. It shows him how to make letters of which he is unsure, and it acts as a practice stimulator by showing exercises that can be done for practice.

Lastly, many supervisors advise writing on the board at every opportunity, even making opportunities for it because writing, like reading, improves with practice and wide experience.

A Related Problem

One other facet of board writing sometimes poses a problem for new teachers, a problem not directly related to the mechanics of writing. This is in the area of spelling. Students are quick to note errors in spelling, so it behooves every teacher to watch his words as he

writes and to proofread his work when he is finished.

Spelling errors in board writing are not due solely to the fact that the writer may be a poor speller in all his writing. Even ordinarily good spellers may make quite obvious errors on the board, because the larger writing surface and the slower rate, as well as the unaccustomed posture and stance while writing, seem to be conducive to a greater frequency of mistakes. Perhaps the interruption of accustomed habit pathways of writing by the aforementioned factors is responsible.

Whatever the reason, when an error is made, supervisors advise a quick correction, a gracious smile, and thanks to the one pointing out the error. Some teachers are embarrassed by an error, and some even hope the mistake can be justified or passed over. But this is poor practice, since it makes the student think what is wrong is right, and, if he knows better, it makes him think the teacher isn't big enough to admit that he makes mistakes like the rest of the human race.

These, then, are some of the common board-writing problems that supervisors of new teachers note; and these are some ways that are recommended for improvement. As with any skill, good board writing can be improved by conscientious, directed practice of good techniques.

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Legal Aspects of Handwriting

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In the field of law, handwriting plays a most important role. It can serve as evidence in matters both civil and criminal. It can be the means of establishing the genuineness of a document or of proving the authorship of disputed or questioned papers.

Indeed, were it not for the information embedded in the simple strokes of the pen, the cunning author of a ransom note might never be caught and brought to justice. On the other hand, that will of Uncle Ezra's, over which he had spent many an hour in deliberation, might be for naught (with his worldly possessions passing on unwillingly to his ne'er-do-well heirs) were it not for the convincing evidence revealed by handwriting.

Authenticity of Documents

In proving the authenticity of various documents, handwriting aids materially in proving the validity or invalidity of wills, receipts, contracts, and negotiable instruments.

A document is the product of a combination of several materials and steps. Each has its own individual and class characteristics. These characteristics, in combination, help to personalize and identify the document's source and history. The type of paper used, the pen, ink, physical effort—each is a definite factor contributing to the distinctiveness of the document. From these factors emerge that telltale product, the author's distinctive handwriting.

Conscious and Subconscious

Handwriting is a conscious act. Through repeated use, the actual formation of each letter and word becomes almost automatic. The experienced writer concentrates most of his conscious thought on the subject matter, rather than on the writing process itself. Thus, writing consists of innumerable subconscious, habitual patterns. These are as much a part of the individual as any of his personal habits or mannerisms. Handwriting is a living and gradually changing part of the writer. It is far from just a mechanical reproduction, prepared by the complex human mechanism of muscles and nerves.

Handwriting Is Personal

The fact that handwriting is so personalized and distinct has made it a very useful asset in courtroom procedure. It is often accepted as evidence, as a means of identifying important papers. In proving a document, the most satisfactory proof of handwriting is, naturally, that of the person whose handwriting is disputed. If he is not available, the testimony of one who saw the instrument executed is acceptable. However, should neither of these sources be available, it becomes necessary to produce testimony

from one who has seen the person write or from one who has had access to, or possession of, that person's handwriting, so as to impress the character of the writing upon the mind. Such a witness then is able to form an opinion by comparing the impression with that which is admitted for examination. The importance of handwriting in such matters, indeed, cannot be overestimated.

Examples

In New York, handwriting experts were qualified to testify that the handwriting of an address on a poisoned package, which resulted in the death of one person, was actually the handwriting of the accused. Their testimony aided materially in securing a conviction of the poisoner.

In Wisconsin, a legatee under a will of a widow, who had general knowledge of the handwriting of such widow, was deemed a competent witness to the widow's signature.

In Iowa, the required witnesses to a will were dead. An individual, who frequently had seen the signature of one of the witnesses, was associated with him in business, and saw him sign his name at various times, testified that the signature on the will was in the handwriting of the deceased witness.

In Texas, bank employees who had acquired wide experience in examination of handwritings were permitted to express an opinion in a matter before the court. In a Minnesota criminal case, another bank employee was permitted to give testimony that he knew the defendant's handwriting and that the handwriting on a particular letter was that of the defendant. In another case in Iowa, the defendant's signature on a hotel register was permitted by the court to be used as a basis for comparison in proving the genuineness of a signature to a confession.

Handwriting Forgeries

While handwriting has proved of great value in establishing the authenticity of innumerable documents, equally important has been its usefulness as a means of detecting fraudulent instruments, namely forgeries.

Outside the courtroom, forgery is synonymous with fraudulent signature or spurious document. In its technical sense, however, forgery may be defined as the false making, or material alteration with intent to defraud, of any writing which, if genuine, might be of legal efficacy or might be the foundation of a legal liability.

The percentage of forged signatures in existence is relatively small. Usually the forgery is committed on important documents or papers which carry a monetary value, and, as a consequence, its detection becomes imperative. Again the forgery is invariably solved by resorting to the handwriting involved and making a comparison. Unerringly, its author is betrayed by his own handwriting.

One does not need the wisdom of Solomon to realize that a forger is confronted with a most difficult task. He not only must copy the habits and mannerisms of another, but also he must perform an abnormal act by discarding writing habits which are peculiar to himself. In the place of his set, usual writing movements, he is faced with the physical struggle of using a strange writing process. In addition, he must deal with an enormous conscious mental problem.

Signatures comprise the greatest number of forgeries. An occasional, overly ambitious forger reaches forth to more difficult goals—an imitation of an entire handwritten document, often known as a holographic document. These attempts, with very few exceptions, end in failure for the obvious reason that the more lengthy the specimen, the more telltale faults are likely to appear in the finished product.

While an attempted forgery invariably ends in frustration, there still remains the problem of determining the identity of the forger. This problem often is difficult to solve, since the process of forgery is, in itself, an excellent form of disguise. Seldom do enough of the forger's own writing habits remain to serve as a basis for identification.

Both state and federal laws have been enacted, imposing penalties for forgery, the severity of which varies in accordance with the nature of the forgery. In any event, the truism, "Crime does not pay," could not find a more graphic illustration than in the particular unlawful act of forgery.

BOOK REVIEWS

THE LONG WAY TO FREEDOM. By James T. Shotwell. Indianapolis, Ind. Bobbs-Merrill. 1960. $7.50.

James T. Shotwell has written a masterfully integrated study of the history of the world and man's struggle to be free—from the Ice Age to the present. The book is based on the premise that freedom, not Capitalism vs. Communism, is the supreme issue of our time. In his long view of history, Dr. Shotwell develops the theory that freedom, being a discipline as well as a privilege, carries with it certain responsibilities. Tracing the development of the races which have won their way to freedom, the author demonstrates how necessary this freedom is for the attainment of political security, economic well-being, and social justice.—Jay Beebe

AN INTRODUCTION TO EDUCATIONAL RESEARCH. By Robert M. W. Travers. New York. The Macmillan Company. 1958. $5.75.

This book presents a fresh approach to a subject of increasing importance to schools of education. It is effectively organized, well written, up to date, and statistically accurate, yet very readable and pedagogically sound. Many chapters contain a number of challenging research problems for the student. Teachers, as well as administrators, could profit by a perusal of this scholarly work.

—Cyril C. O'Brien

JOHN DEWEY'S CHALLENGE TO EDUCATION. By Oscar Handlin. New York, N. Y. Harper. 1959. $2.50.

Oscar Handlin is a professor of history at Harvard and a Pulitzer Prize winner. In this lecture, the second in the John Dewey Society series, he probes deeply into aspects of our social history that are often overlooked, and he seeks historical perspectives on the cultural context. He points out that American education at the turn of the twentieth century needed to be aroused and the new ideas of John Dewey gave the kind of stir and excitement needed. Dr. Handlin maintains that Dewey was and is misunderstood, but he holds that it was Dewey who revitalized American education.—W. P. S.

LEARNING TO TEACH IN THE ELEMENTARY SCHOOL. By Margaret G. McKim, Carl W. Hansen, and William L. Carter. New York, N. Y. Macmillan. 1959. $6.50.

The trio of authors, all from Teachers College, University of Cincinnati, designed this book to give concrete help to student-teachers and to teachers who are in their first years of classroom responsibility. The elementary classroom is envisioned as one in which there are pupil-teacher planning and a problem-solving approach to learning, with the maximum development of each individual as an ultimate goal.—W. P. S.

Writing—One of the Language Arts

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THE close relationship of many of the courses included in the school curriculum affords unlimited opportunities for correlation, and no subject lends itself more naturally to correlating with another than does writing. Whatever subject area is considered, writing is an essential tool that frequently is employed for various aspects of the work. In this way, writing and reading are alike, since the skills acquired in each function in all other fields of learning.

It is because of the universality of its use that educators frequently state writing is or can be correlated with any subject matter—be it fourth-grade social studies or college freshman geology.

This is true—as far as it goes. What is lost in this concept is the fact that writing itself is one of the language arts, is a subject made up of its own content, and can take its place in our school curriculum as such. It is interesting to remember, in passing, that we learn to read and spell in order to write words correctly, as well as vice versa.

Writing is a means of recording and communicating ideas. Formation and connection of letter symbols necessitates a definite degree of mechanical technique. In general, however, writing is a "thought situation." An individual must *think* what he wishes to write. He must select words which will convey his meaning most effectively. He must arrange these words into sentences and the sentences into paragraphs.

A writer uses correct language forms —verb forms, possessives, abbreviations, etc.—in his writing. His sentence construction allows no misinterpretations of his meaning. When his trend of thought changes, he begins a new paragraph. Speakers rely on certain gestures and inflections of the voice for emphasis. A writer depends on punctuation for this purpose. He knows where capital letters are needed and is careful to use them as occasions for them arise. He makes sure that his work contains no misspelled words. He realizes that misspelling creates an unfavorable impression of a writer—even if he is an adult who is writing for publication—and may distort his intended meaning.

Page arrangement is another matter of consideration to the writer. He must know the acceptable format for whatever he is writing. If he writes a letter, the different parts of the letter must be placed correctly on the page. Other forms of written expression, such as a poem or a social invitation, require different formats.

So numerous are the examples of the proper areas of learning to write that it is safe to summarize by stating simply that all basic aspects of written communication form the foundation for our elementary writing curriculum.

The language-arts subjects—reading, writing, spelling, and language—are so closely related that isolating any one of them is virtually impossible. All share a mutual dependence and interrelationship, and all are an integral part of the writing program.

Worth while as experiments to the contrary have been, it now seems safe to assume that the subject is taught more effectively, if it receives individual attention in the daily classroom. It is, therefore, imperative that the various facets of language arts appear in the writing program. A few examples must suffice.

The words employed in the writing program must be those largely found in reading, spelling, and language programs at the corresponding grade levels.

Writing activities must afford the practice which develops the children's abilities to solve everyday writing situations. They should acquire word and sentence feeling, and they should become familiar with the paragraph and creative story writing. They should become acquainted with the correct forms of the many types of social and business correspondence, as well as many specialized written records and communications.

Punctuation and capitalization should be stressed to the point that their usage becomes a natural, nearly automatic process.

Just as any other one subject is considered singly but contributes to the total learning situation, the language-arts subjects are treated as both a separate and an incorporated program, gauged to answer the needs of growing children. In this way, their writing can become a satisfying and correct means of communication.

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Schools in the Age of Decision[1]

C. W. HUNNICUTT
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THIS is a fascinating time to be alive —if our nerves can stand the strain. Ours is the era when the greatest decision of all times hangs in the balance. And you and I, more than most of us realize, will heavily affect the outcome.

What is the decision? Without exaggeration we can say that the choice rests between a potential utopia and a potential hell-on-earth.

Utopia or Disaster?

I could paint in detail the utopia that is almost within our grasp, but I shall merely sketch it. During unnumbered thousands of years, for example, mankind has sought better sources of energy and power to do his work. The muscles of horses and other animals, waterpower, coal with steam, and petroleum—all have marked stages of his progress. However, all of these sources of energy are exhaustible.

Today we are breaking through into the unlimited energy of nuclear power. The submarine Nautilus, for example, traveled more than 60,000 miles on a double handful of uranium, and uranium is much more plentiful than most people think. But fusible hydrogen, a still more powerful source of energy, is found almost everywhere. In every drop of water in the Great Lakes or in the Pacific Ocean, there lurks this element.

Think what this can mean to the power-starved regions of the world. Power means abundance. With cheap power, ocean water can be purified and pumped to desert lands for the growing of food crops. Abundant cheap power also means abundance in manufacture, travel, and electrical conveniences.

We also are learning to use power more effectively through automation. Already human muscles are obsolete. Any industry greatly dependent upon human muscle power is a backward industry. Human brains, too, rapidly are becoming obsolete for routine tasks. My mortgage statement and many of my bills come on punched cards, showing machine-type bookkeeping. Factories increasingly are using electronic controls to achieve optional efficiency.

All of these developments point toward an abundance for everybody. We already have the technical know-how to achieve a utopia on earth. By plugging into the electrical outlet in the wall of her home, today's housewife can command more horsepower than was available to the richest potentate of the past. We could produce automobiles, television receivers, and clothing for everybody. Poverty could be eliminated. No country would need to go to war to acquire a larger share of our earth's abundance for its poverty-stricken people.

There is another and more homely

1. This article is based on an address by the author at the annual meeting of the Handwriting Foundation, September 26, 1958.

way in which modern technology is making utopia possible. Until recently, an ambitious youth, growing up in the country or in a village, needed to go to a city to achieve his goals. Cities contained the wealth and power of major businesses and industries. Cities were the centers of knowledge and entertainment.

Today, all of this is changing. With cheap transportation and electric power, industries are decentralizing. Industries in small towns can compete successfully with those of large cities. Through television and other devices, the best in entertainment theoretically can reach into every village. And with modern transportation, no one is remote from a casual visit to the resources of a large city. A youth thus can plan on returning to a village after college or military service and can plan to have the advantages of both urban and rural life. He can eat his cake and have it, too.

It is a wonderful picture as we look at this side of the coin. But we are only too greatly aware that the coin has a reverse side—a side that is not so pleasant. In fact, we very well may be on the threshold of an era that will see the destruction of all that we hold dear. Those democratic freedoms we took so many generations to secure could vanish in a wave of despotism, exceeding anything ever before known.

We are engaged in a titanic struggle. We are in conflict with a powerful, ruthless, and intelligent enemy, dedicated to our destruction. We dare not underestimate him.

In nearly every previous struggle in which we have engaged, our side has greatly outnumbered the enemy. Today, for the first time, we are the ones who are outnumbered, and greatly so. China and Russia control vast hordes which they are rapidly organizing and developing. Time is not necessarily and automatically on our side. Our future is far from secure.

Pathways to Survival

Two pathways to our survival seem obvious. One is to acquire the loyalty of the uncommitted peoples of the world who hold the balance of power. The other is to make full and complete use of our resources. In both of these, as we shall see, our schools have a major role to play.

The peoples of India, Indonesia, and the rest of Asia as well as the peoples of Africa very well may determine our future. They constitute a vast portion of the human race. Their leaders have known our Declaration of Independence and have revered Washington and Jefferson. After all, America was the first nation to rebel successfully against European colonialism. A decade ago these peoples looked to us for friendship, for encouragement, and for help in fulfilling their aspirations. Today they are not quite so sure. They are watching and weighing our actions. For good or for ill, they are influenced by all that we do.

But the long-range influence we may have on the peoples of Africa and free Asia depends greatly upon the attitudes and behavior of Americans who are not yet adults. The future rests in the hands of children now in our schools. Their decisions well may prove crucial.

Are we helping our children to grow up reasonably free from prejudice, or are they suspicious of those having differing appearances or customs? Do our youth have a driving commitment to

democracy, to the integrity of other people, and to freedom for all? Do they accept responsibility for their actions? Are they accustomed to using intelligence in meeting the everyday problems of life?

The habits and attitudes that will guide children during the rest of their lives are fairly well established by the time they leave our schools. These habits and attitudes will affect their behavior toward other people and, thus, the attitude of others toward America.

What are we teaching in our social studies? Are we spending most of the time looking at ourselves, admiring the glories of America or of our own state? Or are we finding time for a careful study of those peoples who constitute a majority of the human race? Are we learning how others think and for what things they are willing to fight and die? Are we learning to see through their eyes? If so, we may be able to help them to see how things look to us, too. New teaching techniques, using role-playing and socio-drama, are very helpful in this regard. By seeing new viewpoints, we learn to evaluate and gain confidence in our own points of view. We learn to recognize those things in our own lives that are worth fighting for.

We could examine this pathway to survival at much greater length, but let us consider the second approach to meeting the Russian threat, the full use of our resources. The vast natural resources with which we started our national existence by now have been depleted greatly. It goes without saying that, if we are to survive, we must be wise in the use of those resources that still remain. Our schools must help children develop this point of view.

In this paper, I shall not attempt to deal with our great industrial resources, except to mention that the Communists are bending every effort to overcome our lead.

The resource with which we must be most concerned, however, and which will ultimately determine the outcome is our human brainpower. Since we are so greatly outnumbered, the only way we can win is to use our brainpower to the fullest. This is where schools come in. We, as school people, represent the institution to which our society has particularly delegated this task.

The Challenge to Education

In America, our people, as a whole, have been quite confused in our attitude toward education. Knowing that a democracy depends upon an educated people, we have thought education very important. We have panicked somewhat, at times, when critics have claimed that the schools are failures, or worse. Even so, we generally take great pride in our system of education.

Yet, at the same time, we are suspicious of intellectuals—"eggheads" we call them—and we are inclined to consider teachers somewhat ridiculous. The impractical bookworm is a common stereotype in our culture. We don't like to pay for our schools, and we devote but a tiny fraction of our national wealth to their support.

The Russians provide an interesting and frightening contrast. When their leaders began to plan world conquest, they made an analysis of the processes to be used. High on their list of imperatives was education. Education was to be a key means by which they would achieve dominance.

Today, the Russians devote a much larger share of their wealth to the support of education than do we. They pay their teachers well—not just with money, but with respect. Pedagogy is a major and highly respected study in institutions of higher learning. Their high-school teachers have devoted nearly twice as much of their college study to professional education and practice teaching than have ours. The best students are encouraged to become teachers. They believe that good teachers are a top priority. The whole propaganda system of press, radio, and television is geared to impress every person from infancy on with the importance of education. At examination time, all the relatives gather to have a meal with the child and to encourage him.

Classes are kept small, with an average of about seventeen pupils per teacher throughout the public schools. Teachers, including college professors, periodically must prove their fitness to continue in the profession. Students in institutes and universities not only have free tuition, but also they receive a very adequate salary which is increased with each added year during college. If they make honor marks, their salary is upped 25 per cent. Education in Russia is a serious business.

In America, we must meet this challenge. We must become proficient as never before. Don't misunderstand me. In spite of what our critics may say, our schools have been doing a good job. Our young people of each past generation have been prepared to take their place in our growing nation. In addition, there is ample evidence to show that today's children are being taught better than in any previous generation. The trouble with our critics is that they often pick on the wrong things; they have seldom discovered our true weak spots.

The point of all this discussion is that we must do far *better* than we are doing presently. We must help every child to realize that it is his patriotic duty to study hard and to develop himself to the full limit of his ability. For once, selfish ambitions and patriotic obligation coincide. As a youth makes himself more valuable to society and, hence, merits more income, he strengthens our nation in the struggle. It is his duty to go to college, if he is of college caliber, and to take the tough courses for which he is fitted. But regardless of occupation — mechanic, housewife, factory worker, physician—he has the duty to be his best.

We can survive only if each one of our young people develops himself to the fullest. This is too wonderful, too exciting, too dangerous a time for anyone to be a free rider or loafer.

A Solution

The solution today is *not* to develop our alleged best brains and to ignore or discard the rest. We need the best from everybody. Under the plan in many European countries, a child's academic future is determined when he is about eleven years old. It is decided then whether he will be permitted to go on to higher education or will be shunted off into a restricted level of schooling.

In a recent study, the records of a large number of men who had completed the requirements for a doctorate in physics in several of our major universities were examined. Over one-third of these men had elementary school records that, under the European system,

would have relegated them to a low level of educational opportunity. Their abilities would have been lost to society. They were late-bloomers.

There should be no conflict between the education of all children and the best development of the talented. There are many kinds of children and many kinds of talents. Talent may emerge anywhere.

To meet this challenge, we must provide a greater opportunity for teachers to meet the particularized needs and abilities of each child. Classes must be small enough for this individualization to be achieved. Specialized help and the services of experts in each area of education must be made available to assist with unusual problems. This means, of course, that we must have more money for our schools. This challenge also necessitates a re-examination of our curriculum and our teaching methods.

An education that is focused primarily upon teaching and testing factual knowledge (important as this is) is woefully inadequate. Out of the millions of geographic facts in the world, what ones shall we teach? Out of the major biological facts, which are imperative? Increasingly, our teaching must focus not upon facts as ends in themselves, but upon the use of facts as a means of establishing basic principles, concepts, generalizations, understandings, and attitudes. Children must learn *how* to learn. Someone has said that an education is what is left over after all the learned facts have been forgotten. This definition grossly overstates the case, but it contains an element of truth.

New areas of the curriculum are rising to crucial importance without greatly diminishing the importance of existing areas. Almost suddenly, our very survival requires working effectively with people all over the world and being able to speak with them in their own language. Large numbers of Americans must learn Russian, Mandarin, and many other languages.

Diagnostic Teaching

As our curriculum adds new and important areas, we must improve radically our teaching efficiency. Since we can expect to have more things to teach during the years ahead, and since the total number of teaching hours available to us always will be limited, we must achieve more during each of those hours.

Specifically, we must learn to teach our fundamental skills to a much higher level in far fewer hours than ever before. Only thus shall we find time for our total responsibilities. Fortunately, we know better and better how to satisfy this basic need. Continuing research in all of the "three R's" is providing better answers everyday.

The major key, we find, is continuing individual diagnosis—preferably self-diagnosis where possible. When each child is always at work upon his own level, his own specific problems, his own gaps, the efficiency of learning skyrockets. All too often, today, a conscientious child may spin his wheels fruitlessly for long periods of time; then he may be helped to gain insight and to zoom ahead suddenly. This wheel-spinning should be largely eliminated. Repetitive drill without adequate insight is largely wheel-spinning. The child too often develops only a hatred for the task.

Many tools are available to us. The magnetic recorder is a marvelous means for a child to diagnose himself or to be helped to achieve insight into all areas

of oral communication. Many other audio-visual aids are also of great potential value.

All of this description admittedly is but a very sketchy treatment of an important topic. It is designed primarily to point the way to progress, rather than to elaborate in detail. This problem is not too difficult of solution. With techniques appropriate to the problem, each area of the curriculum is subject to efficient, diagnostic teaching.

In closing, lest I have given a wrong impression, may I say that I have full faith that we, in our democracy, shall rise to meet any challenges confronting us. Just as, in the past, there has been the gross danger of underestimating the Russians, so, today, there is the danger that we may overestimate them and be unrealistic in our appraisal of them. To paraphrase Knute Rockne from another context, "They still put on their pants one leg at a time."

Books are not absolutely dead things, but do contain a potency of life in them to be as active as that soul was whose progeny they are; nay they do preserve as in a vial the purest efficacy and extraction of that living intellect that bred them.

—John Milton, *Areopagitica*

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Teaching Science in the Elementary School

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CHILDREN are eager to learn about the world around them. They want to know the "why" of their experiences. It is imperative, therefore, that all children begin the study of science early in the elementary school. In order to do this effectively, teachers need to (1) train children to use the scientific method as they attempt to find answers to questions about their environment, (2) utilize the interest and activity of the learner, and (3) integrate science learning with other curriculum areas.

Basic Principles

As the teacher evolves basic teaching goals, he plans and uses various means to achieve them. Successful learning occurs in teaching-learning situations in which the child is actively involved. His learning is effective to the extent that he comes to appreciate the relationships that exist between his goals and the activities in which he participates to attain these goals. The teacher provides situations in which the child utilizes a self-inquiring approach to discover the *what*, *why*, and *how* of the elements inherent in his environment.

The teacher can help the child learn to use the scientific method of exploring his environment. He should not expect the child to discover new scientific facts, but rather to discover facts already known. To accomplish this result, he must use discretion in answering the child's questions. In other words, he attempts to help a child discover facts for himself rather than to supply ready-made answers to his questions. The teacher, however, may supply the answers to selected questions asked during a science experience. For example, a child may need to have his concept of a phenomenon clarified in order to continue his study.

In general, the scientific method involves the following sequential steps:

1. Recognition of a problem
2. Definition of the problem situation
3. Study of the situation to discover all facts and clues that have a bearing on the problem
4. Development of tentative explanations or hypotheses
5. Selection of the best hypothesis
6. Utilization of experiments or other means to test the hypothesis
7. Tentative acceptance or rejection of the hypothesis and the testing of other possible hypotheses
8. Formulation of an appropriate conclusion

The classroom teacher plays a vital role in children's learning of science. Before the teacher selects his method of

presentation, he attempts to discover something about the curiosity children exhibit concerning the phenomena in their surroundings. He also utilizes those principles which have proven useful in the teaching of elementary science. A few of these principles are:

1. Instruction begins at the learning level of the children.
2. Motivation emerges from within the content of science.
3. Observation is a helpful means to interpretation.
4. Problems and topics are kept within the limits of learner ability.
5. Planning is a co-operative venture between the children and the teacher.

Methods and Techniques

Teaching and learning are closely interrelated. The motivation of learner activity is a primary teacher responsibility. Approaches to the teaching of science include experimentation, demonstration, individual or group projects, reading and discussion, and field trips. A brief treatment of each of these media is presented below.

The most fruitful procedure for teaching science is to have children do things or *experiment*. The good teacher provides children with opportunities to solve problems by handling materials and by manipulating and arranging them. He makes certain that simple, inexpensive materials are used to perform experiments. Science textbooks are valuable sources of suggestions.

It is important to have the children themselves plan and perform simple experiments. Experiments can be utilized to help children to obtain answers to questions or to discover cause-and-effect relationships. A let-us-find-out attitude prevails. Even first-grade children can gain an understanding of natural phenomena similar to the following by means of the experimental approach.

1. Snow and ice are made of water. They melt into water when they are warmed. Bring snow into the room in jars. Let it melt and observe the resulting water; notice the dirt in the water.
2. Water dries into the air. Children use water to paint on the chalkboard. What happened to the water we used on the chalkboard? What happens to the water in the clothes on the clothes line?

In these experiments the teacher attempts to help the children (1) discover the facts brought out by the experiment; (2) understand what was done in the experiment; and (3) formulate conclusions. Similarly, the display of objects or specimens and appropriate demonstrations of scientific activity, conducted by the teacher or selected pupils, are used to (1) solve problems, (2) verify facts, principles and generalizations, and (3) explain methods of procedure.

A demonstration can be valuable if the teacher utilizes procedures such as (1) performing it before he attempts it in class; (2) defining its purpose clearly; (3) performing it in such a way that everyone can see it; (4) using simple apparatus; (5) making it meaningful to the learner; (6) proceeding slowly with each step in order that the main ideas are understood; and (7) explaining the techniques utilized.

A *project* consists of several activities which are designed to solve problems.

Special projects are utilized with both bright and slow learners. Participation in a project gives children the opportunity to develop self-reliance, initiative, and special manipulatory skills. Projects also can afford pupils opportunities to solve problems by means of lifelike situations.

A few examples of appropriate projects for elementary school children are: soap carving of dinosaurs; papier-mâché model of housefly; clay models of rodents; construction of a fire engine; model of a house; and models of early land transportation.

One purpose of the teaching of science in the elementary school is to provide children with opportunities *to observe* the different phenomena of plant and animal life, and mineral matter, as well as the effect of the forces of nature on the materials in their environment. By helping children develop skill in observation, the teacher contributes to the expansion of interest in science, which will enable his pupils to learn more about the physical world in which they live.

When the teacher helps children develop observational skills, he encourages them to (1) note the kinds of answers given to their questions; (2) become aware of the techniques used in the discovery of facts; (3) identify and select the important or relevant details of the phenomena observed; (4) coordinate observation with other means of science learning; and (5) evaluate the results of observation critically in order to select pertinent ideas.

Through *reading and discussion* children can acquire a great deal of information about science and its applications. These are means of providing children with vicarious experiences. Hence, children need to be taught to consult textbooks and other sources of information to solve problems. If children are to derive meaning and understanding from the reading of science materials, they must be taught the unique skills required to locate appropriate information. They need to have developed the ability to (1) recognize a problem; (2) know and use general sources of reading materials, e.g., atlases, encyclopedias, and dictionaries; (3) consult a book's table of contents and index; (4) interpret charts, maps, and tables correctly; (5) skim reading material rapidly to locate scientific information; and (6) become adept in the use of library facilities.

Field trips provide children with opportunities for firsthand experiences. Trips can be so planned and organized that children derive significant learning from them as well as improve their skill in observation. Before starting a trip, the teacher alerts the children to the purpose of the trip and what might be observed. Routine procedures are kept simple. Children may assume some responsibilities in planning and carrying out the plans for trips; the teacher assumes leadership responsibility, however. After the field trip has been completed, the teacher and the class evaluate the experience in follow-up discussions.

Audio-Visual Aids

Audio-visual materials are valuable aids in a program of science teaching. In fact, all materials and equipment used in science are regarded as audio-visual aids. Their purpose is to make more meaningful the child's environment and his relationship to it. Such

aids provide data which might be difficult if not impossible to obtain through firsthand experiences.

Ideally, learning in science would consist of firsthand experiences with natural phenomena. Since this is impossible, teachers utilize devices which give meaning to concepts that then become the bases for new learnings. Audio-visual aids are vauable in science teaching and learning because they help to (1) clarify concepts, principles, and phenomena; (2) supply appropriate vicarious experiences; (3) make symbolic language more meaningful; and (4) motivate children toward an interest in the world of science.

Average and slow learners especially should be provided with many concrete illustrative materials to insure their understanding of abstract relationships. Audio-visual aids can be used effectively if the teacher (1) sets up definite purposes for their use; (2) utilizes appropriate aids in his plans; (3) makes preparation for their use in advance; (4) prepares the class for the particular type of aid used; (5) relates the learning material to the experiential background of the learner; and (6) provides follow-up activities to insure the achievement of the purposes for which they are used.

Lesson Planning

In science, as in other curriculum areas, there is no one best method of teaching. There are many variables in a teaching-learning situation, the utilization of which determines the outcomes of the process. Generally, there are three frames of reference currently employed in the teaching of science in the elementary school:

1. The experiences of children are utilized as a basis of learning. New learning is based on the quality and quantity of old learnings.
2. A systematic body of scientific concepts, information, and facts serves as the basis of teaching.
3. Children's previous experiences and science content are basic to the teacher's presentation of any unit of science.

Plans for directing classroom learnings include a variety of activities which are adapted to the needs of a particular class group. A lesson plan usually consists of six parts: (1) aims or purposes; (2) content of lesson outline; (3) pupil activities; (4) teaching techniques to be used; (5) specific materials to be included; and (6) evaluation of the procedures followed. A specimen lesson plan which has been used by a student teacher under the supervision of one of the authors is presented here.

AIR OCCUPIES SPACE AND EXERTS PRESSURE (GRADE 4)

I. Purposes
   1. To help children learn that:
      a. Air occupies space
      b. Air exerts pressure
      c. Air is all around us
      d. Fresh air has no color, taste or odor
      e. Air is used in breathing
      f. Air can be seen through
   2. To help children acquire an understanding of their relationship to the air around them
   3. To help children broaden their interests and gain an appreciation of science
   4. To help children grow in the

ability to think clearly and logically by having them experiment, observe, etc.

5. To help children learn to share responsibilities while working in a group
6. To provide children with "fun" while learning

II. Materials

1. Several straws, tumblers, handkerchiefs, cans, balloons, cardboards, rectangles, towels, watering cans, and soup ladles

III. Time Schedule

1. Setting up of pupil committees —30 minutes
2. Instruction for use of material— 15 minutes
3. Class activities—40 to 60 minutes
4. Evaluation of procedure — 10 minutes

IV. Procedure

1. Introduce topic by using well-known class game: "I am thinking of something in this room that starts with 'A'" Answer "Air." Where do we find air? We can tell air is all around us because we feel it as wind and we breathe it. Worms and fish also breathe air from soil and water. We need air to breathe. Fresh air has no taste, color, or odor, and we can see through it. How do we know that it is real?
2. Air takes up space. Have some child crumple a handkerchief in bottom of a tumbler. Invert the tumbler and immerse it in a can of water. Remove the tumbler. Handkerchief is dry. Air in glass kept the water out. Repeat.
3. Air exerts pressure.
   a. Place a piece of chalk on balloon. Inflate quickly. Chalk jumps. Air pressure forced it upward.
   b. Fill tumbler with water. Slide cover of cardboard over it. Invert tumbler. Air pressure holds card and water in place.
4. Air takes up space and exerts pressure. Have a child hold one finger over the end of a straw. Immerse it in water. Water does not rise. Release finger. Water rises. Replace finger and remove straw from can of water. Water remains in straw.

V. Evaluation

1. Discuss experiments.
2. Have each child submit drawings and reports on the experiments.
3. Make toys by using the principles learned, e.g., toy parachutes.

The success of this lesson depends on the teacher's ability to motivate his pupils to perform the experiments and to understand the principles involved. Adequate instructional materials also are needed if successful learning is to be achieved. Fortunately, there are available various simple materials that can be used by the resourceful teacher. Finally, careful planning by the teacher insures more effective learning on the part of the pupils.

"Open Wonderful New Worlds—Wake Up and Read"

National Library Week

April 3-9, 1960

The College Library and Reading

E. J. JOSEY
Librarian, Savannah State College
Savannah, Georgia

COLLEGE libraries have a grave responsibility for stimulating the reading habits which should remain with their graduates throughout their entire adult lives. Since the Sputniks went into orbit, American educators have been increasingly concerned about the quality of American education. It is the opinion of this writer that the quality of American education is inextricably interwoven with the reading habit and the reading interest that American college graduates display years after they have finished college.

Growing Concern

Long before the advent of the Sputniks and the renewed interest in higher education, librarians, in general, and college librarians, in particular, were very concerned about adult reading. A manifestation of American librarians' growing concern regarding the very little book-reading in which American adults engage was their initiation in 1958 of the annual nation-wide observance of National Library Week. Whether or not National Library Week sold the idea that a better-read and better-informed citizenry is a requisite for a democratic society is a moot question. It is easy to agree that National Library Week is a noble idea. Yet the paradox remains that it is a travesty on American education that so many of our college graduates have to be reminded through a library week observance about the importance of reading.

There are perennial questions that continue to crop up as nightmares for college librarians. Some of these questions are: To what extent is the college library responsible for fostering the reading habit? How do college libraries inculcate a love for and appreciation of good reading? How do the teaching habits of the faculty aid or hinder the college library's reading responsibility? How will the larger enrollments affect the college library and reading? The foregoing questions represent only a few of the perplexing problems facing college librarians today.

The Library's Responsibility

The college library is the backbone of the instructional program. Since the college library is the backbone which sustains the entire academic program, the library collection should be a well-balanced and up-to-date collection which will fulfill the needs of the curriculum. In addition to books for the curricular areas, there should be an adequate representation of books which will quicken and awaken the intellectual curiosity of the students in non-curricular areas. In other words, the library collection should be broad enough to satisfy the intellectual hunger of students who wish to branch out and do independent study on their own.

Acquiring and assembling a well-balanced collection in a college library presupposes that adequate book funds will be available. With the influx of more and more students on our campuses and the rising cost of books, college libraries find it increasingly difficult to keep abreast of the new books and monographs that are being published as well as to acquire the older standard works that are needed to fill in the gaps of the collection. It is impossible for college librarians to assemble a well-rounded book collection on the same small book budget of five years ago.

An adequate book collection will, in the opinion of this writer, induce the college student to go beyond the required reading assignment. And, in all probability, in his quest for knowledge in his major field of concentration, the college student will discover new horizons and new fields of interest if there is an excellent book collection from which he may draw. A first-class book collection is the *sine qua non* of the college library.

Turning to methods employed by college libraries to inculcate a love for and appreciation of reading, we find that a variety of procedures are used. The most widely used method is an attractive book display.

One of the most cogent comments by a librarian with reference to the effectiveness of a display is "display is a powerful medium of communication. It is one of the mass media that can be used to educate, to propagandize, to sway the thoughts and acts of all of us."[1] I wholeheartedly agree with the foregoing statement. I have seen many library patrons persuaded to read a book on a subject by viewing an attractive book-centered display.

Exhibitions from museums, private collections, and governmental agencies which are book-centered are a great stimulant to reading. Several college libraries sponsor a monthly book-reviewing program, a lecture series, and reading clubs. All of these programs are excellent means of stimulating a love for reading. Many libraries have offered prizes to students for assembling a well-rounded personal library.

But, in the process of pointing out successful methods that have stimulated reading, we must not minimize the importance of the college librarian who, in his or her quiet way, suggests a good book to a student during conversation or who attempts to ascertain the reading interests of students and brings to the attention of students new books in the field of the students' interests.

All of the methods aforementioned are not new or revolutionary. Yet, are these all of the methods that librarians can use to stimulate the reading habit? Are we financially able to employ readers' advisors to tackle this problem?

The Faculty

How do the teaching habits of the faculty aid or hinder the college library's reading responsibility? More than twenty years ago Professor Randall of the University of Chicago and Professor Goodrich of the College of the City of New York wrote, "Far from encouraging 'free' reading, faculty members actually do much, in too many cases, to discourage it by the assignment of reading of a specific nature which requires a large

1. Irving Lieberman, *Audio-Visual Instruction in Library Education* (New York: School of Library Service, Columbia University, 1955), p. 153.

amount of time and energy of the student. Reading and the library thus become irremediably associated with lesson learning." Continuing their criticism of the faculty, Professors Randall and Goodrich assert, ". . . in many cases the instructors themselves must be blamed. It is much easier to find one or two books which are useful, and to assign them over and over again, than it is to be constantly seeking material to produce bibliographies for student use which will admit of choice and thus remove to some extent the stigma of assignment."[2]

Although twenty years have passed since the foregoing criticisms were written, they are germane today in describing some college reading assignments.

Turning to a recent critic of college teaching, Professor Henry Steele Commager, Professor of American History at Amherst and Adjunct Professor at Columbia writes, "Now that students can read for themselves, the English universities have turned more and more from lectures to tutoring or to self education . . . but in the United States, which has the best library facilities in the world . . . professors go on giving courses as blithely as if no printed books were available. One simple way, then, to meet the shortage of teaching talent, is to cut down on the lectures and therewith reduce the number of professors that lectures call for. From the point of view of the student, the time spent going to lectures and preparing for course examinations can more profitably be spent in the library."[3]

There is still a crying need for college professors to select a reading list which would include a wide variety of readings that would not confine their students to a limited number of authorities in the field. The suggested reading list for college courses should not be shallow and superficial. Instead, the reading list should have depth and be broad enough to include the writings of authorities from several schools of thought.

Don't be afraid of the nonacademicians! Our reading lists do not have to be so pedantic. In the field of history, there are excellent historical novels that could be used with the freshmen survey courses. History would come alive for those students who have a fear of wading through many of our large history tomes. Many of these novels are written with great respect for historical fact, and, in many instances, meticulous research preceded their writing. Turning to the sciences, a physics or chemistry professor may open new horizons for his students by including biographies of such scientists as Meitner, Einstein, Curie, Bohr, and others. Biographies would not necessarily sacrifice the sacred content of the science course. On the other hand, the science course would be greatly illuminated.

It is not the purpose of this writer to convey to the reader the impression that all of our college professors are not aiding the college library in its aim to foster a love for reading. Moreover, there are many lovers of books on our college faculties. There are professors who casually mention books in their conversations with students in conference or on the campus; there are others

2. William M. Randall and Francis L. D. Goodrich, *Principles of College Library Administration* (Chicago: American Library Association and the University of Chicago Press, 1936), p. 152.

3. Henry Steele Commager, "The Problem Isn't Bricks—It's Brains," *New York Times Magazine* (January 29, 1956), p. 11.

who never end a lecture without alluding to two or three titles that have been published recently in their subject fields. There are still other professors who have rebelled against the reserve book system in our libraries by refusing to place a limited number of the "best" books on reserve; these professors would open the stacks to their students and give them an opportunity to make their own selection rather than having a few books available on the subject.

All in all, there is much that the faculty can do to stimulate reading. The library staff is not able to do it alone. The college faculty is in the classroom, which is a strategic place to propagandize about the joys of reading.

Larger Enrollments

In the days ahead a large group of young people will be entering our nation's colleges and universities. These young people will be coming to college for a number of reasons. But we hope and pray that these young people who will crowd our nation's campuses will bring with them an eagerness for knowledge and a love and appreciation for books and reading. If these young people do not bring an appreciation for books and reading, then it is the responsibility of the college library staff and the college faculty to do all in their power to develop such appreciation.

By 1970, our college enrollment will have doubled.[4] How will this vast influx of students on American college campuses affect the college library and reading? It seems to me that the foregoing question is the most pressing one faced by college librarians in the crucial days before us.

The distinguished librarian of the University of California at Berkeley, while discussing the effect of a rising student population on his library, identified six factors stemming from population growth. Donald Coney identified these factors as curricular growth, larger faculty, faculty-student ratio, research and professional education, liberal arts changes, and size of student body. These six factors will not affect all college libraries in the same manner as they will affect the University of California Library, because all of our programs are not so colossal as that great western university. Yet, most of us will have to deal with many of the factors pinpointed. Let us look at one of Mr. Coney's factors, *larger faculty;* he writes, ". . . we all know what effect a new faculty member has on our operations. No matter how well supplied we are with books in his general field, he always imports a new aspect of need and finds the collection inadequate in some degree or other. Men brought into the faculty to augment its variety often find that they must commence to build a collection from nearly the beginning."[5]

With clarity and vision, Professor Coney has focused our attention on the financial resources needed by a library to solve just one of his six areas. If we are to satisfy the book demands of a larger faculty, it is imperative that sufficient monies be made available to fulfill this need.

4. *New York Times,* August 11, 1957.
5. Donald Coney, "The Flooding Tide Or: Where Did You Go? To the Library. What Did You Get? Nothing," *College and Research Libraries,* Vol. XIX (May, 1958), pp. 180-181.

Conclusion

Four questions were posed in this paper: To what extent is the college library responsible for fostering the reading habit? How do college librarians inculcate a love for and appreciation of good reading? How do the teaching habits of the faculty aid or hinder the college library's reading responsibility? And how will the larger enrollments affect the college library and reading?

These questions were not discussed from a standpoint of attempting to give the solutions or answers. Rather, current practices were discussed and some suggestions were offered. Since there have been no empirical studies on the positive effects of the college library on its graduates' reading, the margin of uncertainty is great. We should think of that which has been written as being exploratory until further research is done. Yet, the college library must begin to face its responsibility in regard to its students' reading. I don't wish to intimate that the college library has disregarded its responsibility, but I do wish to assert that it cannot stand by idly without attempting to ascertain the crux of the problem and without endeavoring to find possible solutions.

The college library must not bear the complete responsibility, for the faculty has a stake in the reading of their college students. The faculty is in an advantageous position to nurture the love for books and reading in the classroom or in any situation where they have face-to-face contact with students. Perhaps the most substantial help for the library is an increase in book funds from college administrations to meet the book needs of the growing student bodies. A concerted effort of college libraries, faculties, and administrators will ensure the college a sound reading program which, in turn, will stimulate college graduates to be lovers of books throughout their adult lives.

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A Broader View of Vision[1]

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THE profession of optometry is concerned with maintaining, promoting, and enhancing human vision in a society which is so dependent upon visual communication. Optometry is concerned with how much meaning an individual derives from what he sees as well as how clearly he sees an object. In the past, human vision has been equated with the eyeballs and visual acuity; however, in the light of research that has been done in the fields of psychology, optometry, physiology, cybernetics, child development, and illumination, it becomes apparent that a broader view of vision must be taken.

Definition of Vision

Dr. A. M. Skeffington, Director of the Department of Education for the Optometric Extension Program, defines vision as, "The process of synthesizing and abstracting the experiences of the organism and mobilizing them upon the instigating trigger of a visual datum" (6). Vision is the ability to get meaning from those things that we cannot taste, touch, hear, or smell when the initial stimulus is light.

When we equate vision with visual acuity and the eyeballs alone, we are thinking of vision at the level of the chimpanzee. The chimpanzee has shown that he has 20/20 visual acuity or better; however, it will never need to derive meaning from symbols — and couldn't if it needed to.

We must think in terms of the demands placed upon human vision and our ability to meet these demands. In a study conducted recently by an optometrist, Dr. R. T. Tolo of Minnesota, it was found that a child through twelve years of school is required to read 432 books. Dr. N. C. Kephart of Purdue University found that a minimum of 203 books comprised required reading through four years of college (6). These figures do not take into account reading for pleasure. It seems, then, that an investigation of vision should take into account not only how clearly an individual can see at twenty feet, but also how effectively he can perform at near point.

Process of Vision

Vision is a process which involves the eyes, the brain, and the rest of the body. When an object attracts our attention, we must first point our eyes to that object, then focus. Light entering the eyes is converted to coded electrical impulses (nerve impulses) which go to a center in the brain, where they start a search for meaning through all of our past experiences from all of our senses. This information is sent to a higher center where we decide how to apply this information—action follows (6).

1. This paper was presented by Dr. Wiener on March 20, 1959 before the New Jersey Academy of Science at Rutgers University.

"The eye sends continual rhythmic streams of electrical potentials. These charges have in themselves not the faintest elements of the visual—having, for instance, nothing of 'distance,' 'right-side-upness,' nor 'vertical,' nor 'roundness,' nor 'squareness,' nor 'contour,' nor 'transparency,' nor 'opacity,' nor 'near,' nor 'far,' nor visual anything—yet conjure up all of these" (5).

The pointing mechanism is under the control of the voluntary or skeletal nervous system. The focusing mechanism is under the control of the involuntary or visceral nervous system. Nowhere else in the body must these two nervous systems operate as a team (2). We learn how to use our eyes in order to point and focus them, and we accumulate experiences which we store for future reference. This is all developed over the years of growth and life in general (3).

If, for any reason, there is any difficulty in the process of gaining meaning or using information through this system, we have a visual problem (6). This problem may exist, even though, the person has 20/20 visual acuity. Studies by Emmett A. Betts have shown that the majority of children with reading problems are those who have 20/20 visual acuity or better (1). Adaptation to this problem of gaining meaning under stress can lead to myopia, astigmatism, suppression of vision of one eye, or poor achievement.

Guidance of Vision

When vision is considered as an act involving the entire organism, it is then possible to guide the development of visual performance by investigating the areas involved. Dr. Arnold Gesell states, "Vision is the dominant factor in human development" (3). Increased visual performance has led to greater intellectual achievement and to prevention of various types of "eye defects."

"The limit to which visual perception can be extended through proper training is still unknown. We are certain that it can be improved to an almost incredible extent, provided the observer is willing to work and provided he utilizes the proper methods. The difference between the expert and the novice in the rapid and accurate perception of visual material is the same difference between the expert and novice in the performance of any skillful act. We have to learn to see just as we have to learn to swim, to play the piano or to speak French. This can be done with skill and efficiency or it can be done haltingly and ineffectively" (4).

A broader view of vision must be considered in order for our children to reach the full potentials of their ability.

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An Epilogue to the John Dewey Centenary

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SOME of the followers of John Dewey have led their students to believe that the experimentalist school of thought is so exclusively adequate, so universally true, that a democracy has no need to teach other systems of philosophy. Indeed, such leadership on the part of one of the many formal schools of thought in American culture has been persuasive among many classroom teachers who are not philosophically oriented. However, such indirection appears unwise. It is leadership along a perilous path to philosophic conformity.

Philosophic Conformity

For a teacher in a free society, the unqualified acceptance of one system of thought is fraught with danger. It is rather easy for a teacher to experience vicariously with the original mind the creative process and the personal satisfaction of an unfolding organization of thought. A danger arises when the teacher's own creative thinking is submerged in a wave of intellectual excitement. For in this state of mind, he can become a blind follower who envisions himself as a partner in the creation and extension of the master's ideas. What is so frequently overlooked is the fact that the follower's power stems from his commitment to the master; and this commitment denies a follower the privilege of substantially changing the philosophic basis of his authority.

Yet it was this privilege that kept an original thinker such as John Dewey free. Dewey was free to rebuild or abandon anything he constructed. He was free to indulge in doubt about his basic premises and to wonder about the adequacy of his system. He was free to consider other philosophies. These freedoms a follower jeopardizes in his unqualified commitment to one system of thought.

Of course, there are those who believe that a social order should be integrated along the lines of a coherent system of thought. They prefer that one philosophy be integrated into a whole way of life, that it become directive of society rather than merely enlightening of it. They urge that philosophy forsake its role as one of the liberal disciplines and that it become an ideological frame of reference for the entire culture. What they have forgotten to note is that John Dewey himself found freedom by not committing himself to any extant philosophy in his own heritage.

Ceaseless Quest

Occasionally, one is aware of a teacher whose commitment is unlike that of some of Dewey's followers. Here one discovers a commitment to a never-end-

ing search in which the teacher's path is enlightened by all systems of thought, not directed by any one of them. Here, indeed, is the spirit of liberal learning in which the teacher not only knows more than his students, but also learns with them in a distinctive way.

About one thing the teacher does not know: he is not certain what is really the best ultimate commitment for society, even though he does know more than his students about what man's commitments have been in the past and more regarding the current arguments for and against them. In other words, he has infinitely more knowledge than his students, but his knowledge has led him to wisdom, not to ultimate dogma. With wisdom he discovers that, in all his knowledge, he does not finally know. And the students' awareness of this fact sets them at one with their teacher in a ceaseless quest. It is the spirit of this never-ending search for knowledge that safeguards freedom and encourages the creative thinking in which a democracy must put its ultimate faith.

BOOKS FOR YOUNG READERS

CHARLES CARROLL AND THE AMERICAN REVOLUTION. By Milton Lomask. New York, N. Y. Kenedy. 1959. $2.50.

Charles Carroll of Carrolton is known to every American who has examined the signatures appended to the Declaration of Independence. The career of this sterling patriot, however, remains a closed book to most Americans. In this book for young readers from ten to fifteen, the life of this distinguished Marylander is warmly and vividly told.—Paul Zankowich

THE KINGDOM OF CARBONEL. By Barbara Sleigh. Indianapolis, Ind. Bobbs-Merrill. 1960. $2.95.

This story by the author of *Carbonel, the King of the Cats,* tells of the adventures of John and Rosemary who meet the black cat, Carbonel, again and are selected to be guardians of his two royal kittens.—P. Wishard

YOUNG SCIENTIST TAKES A WALK. By George Barr. Illustrated by Jeanne Bendick. New York, N. Y. Whittlesey House. 1959. $3.00.

Here is an excellent guide to field experiences for young scientists of ten years of age and up. George Barr, consultant in elementary science for the New York City Board of Education, knows his science—and he knows children. In this volume, he bids youngsters take compass, pencil, and a small magnifying glass and join him in an exploration of the out-of-doors. There is, fortunately, much stress on "open-ended" experiences that will lead youngsters to discover things for themselves.—Paul Zankowich

THE STORY OF THE REVOLUTIONARY WAR. By Colonel Red Reeder. Illustrated by Frederick T. Chapman. New York, N. Y. Duell, Sloan and Pearce. 1959. $3.95.

Colonel Reeder's *The Story of the Civil War* justly won plaudits from young readers. In the present volume, he has produced a worthy companion to the earlier book. The book is a complete and panoramic picture of the American Revolution from the night of Paul Revere's ride to the surrender at Yorktown.—Paul Zankowich.

OUR WORLD OF SCIENCE. By Duane Bradley and Eugene Lord. Illustrated by Tibor Tors. Philadelphia, Pa. Lippincott. 1959. $3.00.

Scientists from eight to twelve will find answers to a great many of their science questions in this lucid and easily understandable book. Topics covered include sound, light, air, water, motion, gravity, heat, electricity, and magnetism. The book will help parents to guide their youngsters' scientific interests.
—Paul Zankowich

Should Parents Coddle Their Retarded Readers?

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A GASP went up at a meeting of parents of one hundred retarded readers in a summer reading clinic when it was suggested to them that they could help their children best by relaxing all pressures related to reading at home and by establishing firm, consistent general discipline.

This surprise is understandable when we realize the confusion that exists in the minds of the public about what goes into re-educating children who have failed to learn to read up to their mental capacity. Tests and interviews with children who show a true pattern of reading and spelling retardation and talks with their parents reveal both turmoil and tragedy. These children and adults have experienced the hurt of failure, and they are looking for ways and means of turning the tide of learning into a positive direction.

Removing Parental Pressure

Our first request of parents who bring children into summer reading classes for tutoring is that they do not carry on any coaching or teaching activities at home. "Please have fun with your child this summer," we advise, "and leave the teaching to the clinic."

Release from home pressure in the very sore area which surrounds the subject of reading is one factor essential to the progress of each pupil. Parents, understandably anxious to co-operate in what they hope will be rapid progress, often ask: "Should we hear our child's words? Have you any drills we could do together at home? How can we help to speed up our child's learning, so he'll be up to grade level in the fall?"

It often is helpful to explain that the request for removal of pressure of teaching by parents is a protective measure; that is, it is intended to protect and preserve the essential qualities of the parent-child relationship. A growing child is so dependent upon the love and approval of the adults in his home that every time one of them corrects his pronunciation of a word, or corrects his spelling, or supplies a word in his reading which he cannot remember, there is implied criticism, which may cause the child to experience unduly strong fear —fear that he will lose parental love and approval.

Sensitive parents are torn between their desire to help the child and their impatience to see him progress. We feel that, whenever a parent attempts to teach in a subject in which the child has chronic difficulty, there is great danger that the child will absorb the impatience of the parent, become impatient with himself, and lose all courage to proceed.

One father asked, "How can we get

across to our children the idea of the importance of learning to read?" The answer sounds simple, but it is difficult to arrange. The poor reader must be presented with tasks related to reading, which he can master, so that he takes note of his own progress and, thereby, gradually gains a sense of confidence in his powers to learn something on his own.

A growing child, by virtue of his youth and inexperience, cannot grasp the whole significance of education, nor estimate the importance to himself of mastering reading for self-development. Even a child who progresses normally or rapidly in learning to read has to wait for a period of two to six years before his mastery of the mechanics of reading opens the door for him to independent, voluntary reading. Therefore, when we tell a child, "You ought to hurry up and learn this well, so you can enjoy reading and study more efficiently," we are talking from the standpoint of adult wisdom and experience. But the child figuratively is deaf to this argument, not because he is naughty, or stubborn, or lazy, but because he hasn't lived long enough to comprehend its truth. The only language a youngster understands is the firsthand experience of specific learning success.

Parental Example

What can parents do at home to help? They can set examples of good reading habits. A father who regularly reads good literature aloud, for his own pleasure, helps his whole family, including the retarded reader. He provides the children with a vital aspect of reading—the listening, attending, and comprehending aspect.

On the other hand, a parent who sits down and tries to share the reading of a primer or basic reader with his child is running the risk of showing up and "rubbing in" the child's chronic difficulties and errors. The child, of course, finds it difficult to pay attention, feels no enjoyment, and is unable to prevent himself from making errors. In spite of his conscious efforts, even the compliant child will continue to fall into the same errors over and over again—when he reads to a parent.

Reading Teacher

All reading, then, should be banned from the home and left to a reading specialist or remedial teacher. Such a teacher is trained to vary the exercises and procedures in such a skillful way that the youngster is not forced to fail repeatedly.

Another thing about the reading teacher which makes her different from parents is her attitude of objectivity, which helps to boost the morale of the retarded reader. When a child has to be corrected by a stranger, self-respect is not destroyed, as it often is when the child is corrected by a blood relative. Even the regular classroom teacher sometimes becomes so emotionally involved with a child's reading problem that she cannot help him.

We now understand enough about the emotionality of most children who are experiencing reading failure that we can state that they progress best in an atmosphere of friendly impersonality. This means that the teacher or tutor must be able to establish himself as a person who likes children and who is able to accept the reader just as he is. The tutor's training, then, enables him

to offer a carefully selected series of tasks and challenges to the child, which will encourage the child's growth in independence and confidence.

The fact that reading cannot be taught but must be learned is not obvious to the general public, but it is exceedingly obvious to those of us who work in reading clinics. Our job is to set up the lessons so that the child will succeed, presently will acknowledge his own success, and, then, will begin to pull himself up by his own bootstraps. Parents, when they try to be teachers, tend to focus their main attention on the outcome and to view the errors as stumbling blocks. Reading clinicians focus their main attention on the learner and his individual way of learning; they view the errors as signposts to help them to design corrective instruction.

Discipline

Still parents may ask, "What can we do?" Then they show surprise if we say, "Don't nag, punish, or deprive the child. But be sure you have a firmness and consistency in home discipline."

There is evidence that improvement in home discipline results in improvement in reading for some retarded readers. By discipline, however, we do not mean punishment or deprivation. A child, deprived of a camp experience, a game with his friends, a friendship, or the privilege of watching television because of his lag in reading development, will be likely to translate this to mean, "They don't love me because I'm dumb. So, what's the use of trying?"

Too often, a child who experiences trouble in reading also has trouble growing in responsibility and self-discipline. Such a child comes from an atmosphere which confuses him, because it alternately punishes and coddles.

The kind of discipline which is meant here is the kind calculated to bolster the child's feelings that somebody cares. It should include consistency in the routines of eating and sleeping. Parents should insist, in a friendly but unyielding manner, that the youngsters go to bed at the time set by the parents. Firmness implies that the parents do not give in to the child against their own better judgment. For example, if television poses a problem, a parent may find it helpful to get the child to "star" his favorite programs—one star for pretty good, two stars for good, three stars for very good, and so on. Parents may then permit the child to watch the five-star programs but not the others. A child scarcely can be expected to develop critical powers and good taste, unless the parents guide him.

In addition, parents may look for signs of the child's growing up and may encourage him to assume responsibilities in and around the home. If the child wishes to take care of a garden or a pet, or if he wishes to do some independent shopping or trading, he should be allowed to do so. These experiences can be valuable in permitting the child to feel needed, grown-up, and capable.

A tightening of home discipline will aid a child in growing up, relinquishing his baby habits, and feeling that someone cares about his character development. The "growing up" feeling is closely related to an improvement in ability to read. Coddling, oversympathizing, nagging, blowing hot and cold—i.e., now indulgent, now strict—all hinder the growth process because they leave the child feeling helpless.

A Trend in Curriculum Development

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AMONG educators in the public schools today, there seems to be a significant trend toward developing courses of study on a vertical basis. This is a good sign. The superintendent is becoming more and more aware of the need to identify his school program. As a result, the curriculum director is playing an important role in pulling together and organizing the various facets of the school program.

To organize and direct vertical coordination of a subject-matter area is a major task. It is a responsibility that should be assigned to a full-time director of instruction who can devote much of his time and energy to such projects.

Vertical Curriculum Study

The primary reasons for developing a vertical course of study in each subject-matter area are:

1. To identify the content of a subject-matter area at each grade level
2. To determine the minimum essentials to be taught in a subject in each grade
3. To suggest motivational procedures for each grade level.
4. To provide the teacher with reference material that will furnish information for the concepts to be taught
5. To integrate the material taught in the elementary, junior high, and senior high schools
6. To provide incoming staff members with something definite in the area of instruction

Generally speaking, a school system will follow a schedule of organization in planning a course of study, regardless of what subject-matter area is up for revision. To be sure, there are certain adaptations that must be made, according to the dictates of the subject being studied.

To do a complete vertical study of a subject, every elementary teacher as well as every teacher of that subject in grades seven to twelve, in some way, should be involved. Sometimes a vertical study is made in a specialized area and involves only secondary teachers—home economics, for example. Seldom would a study involve only elementary teachers. Teachers at least through grade nine can be allied to any elementary vertical study — e.g., handwriting, spelling, reading, science, and health. All teachers, kindergarten through grade twelve, should be involved in the building of courses of studies in English, social studies, mathematics, science, health, and physical education.

To build a course of study in any field, it is necessary to consider five

very important elements: (1) committees, (2) leadership, (3) time, (4) money, and (5) organizational structure. These five elements are equally important, and no school system should begin such a tremendous undertaking without assurance from the school administration that these things can be provided.

Committees

To start a project, a school system will need a vertical planning committee for each subject area. This committee should contain, roughly, one or two teachers from each elementary grade, two or three junior-high-school teachers, and two or three senior-high-school teachers. Thus the central committee will comprise between eighteen and twenty members, plus a committee chairman.

Committee members may be chosen arbitrarily by the administration, by lot, or from volunteers. Another method is to ask principals to have their staffs nominate a list from which the administration chooses personnel for the committee. Generally, volunteers make good contributing members.

From time to time, key people may be added to the project. Subcommittee chairmen should be chosen early in the study, one for each division level, i.e., elementary, junior high school, and senior high school.

Leadership

Strong committee leadership is necessary to carry through to a successful conclusion the building of a vertical course of study. The leaders, ideally, will have had experience at many levels of the instructional program. An ideal chairman for a vertical science committee, for example, will be a person who has had experience teaching science in the elementary, junior-high, and senior-high grades. Such a person is not easy to find, particularly since he also must be able to work well with other staff members. If there is not an ideal person available, the chairman should possess at least most of the desired qualifications.

Leadership is stressed because vertical courses of study that have been developed generally have been only as good as the leaders of the committees that have developed them. Weaknesses in a course of study frequently reflect weaknesses in leadership at this level.

Time

To change a course of study or to rebuild a program in any subject is an expensive proposition. To begin with, the time of teachers is valuable; yet, they must be allowed time to perform this task if the job is worth doing at all.

There are many ways by which teachers can be given time to do this extra work. Secondary teachers, who are vertical-curriculum-committee members, can be given an extra free period each day. This will give them an opportunity to correct some of their papers, plan lessons, or hold conferences—tasks ordinarily accomplished during the periods these teachers are in committee meetings. Such a practice, of course, is expensive and may be impractical except in larger city systems.

Elementary teachers can be relieved for committee work by hiring substitutes one or two days a month, depending upon when the committee meets. Each

community has to determine how it will compensate for the added burden of curriculum revision placed on its teachers. Some school systems conduct curricular studies, to a great extent, during the summer months. This means that the members of the committees receive an extra month's salary for a summer or two, but it is one way of accomplishing an important task. This is the plan used successfully in Rochester, Minnesota.

Money

Change in curriculum implies improvement of instruction. To improve instruction, a school system probably will have to spend more money on instruction. Research points up the fact that the caliber of instruction in a school system correlates very highly with the amount of money spent on instruction.

A completely new course of study in a subject usually means new textbooks and other materials for each grade level, as recommended by the vertical committee. This is a tremendously expensive program. Although Rochester is a comparatively small school system with only four thousand elementary pupils, our new science course of study for the elementary grades entailed about forty thousand dollars in new books, materials, teacher time, and equipment—and we still have a long way to go.

Organizational Structure

Once a vertical committee has been established, it will need to meet once every two weeks for the purpose of reviewing (1) the nature of the problem it has been assigned; (2) a plan for organization; and (3) a tentative timetable for subcommittees that will be appointed to assist the vertical committee.

At the appropriate place and time, other things must be decided:

1. What is the nature of the present program?
2. What are the weaknesses of the present program in light of recent trends?
3. How can the committee bring other members of the teaching staff into the study?
4. What information might be gained from a survey of the elementary teaching staff's opinions in regard to subject content at each grade level?
5. Could worth-while information be gained through a survey of junior- and senior-high school teachers teaching this subject?
6. What can our study accomplish?

These and many more items should go into the planning that will be done in the first few sessions of the vertical committee. It is imperative that a secretary be assigned to this committee, one who will take extensive notes of discussions and provide each member of the committee with minutes and complete agenda.

The Study

The next step which the vertical committee must take will involve the greater part of a school year, if the committee meets only once or twice a month. During this period of research, study, and planning, the curriculum director or someone assuming this responsibility should gather materials from all over the country in regard to the subject being studied. Among these materials

will be copies of textbooks, teachers' manuals, and courses of study or curriculum guides that have been well written and successfully implemented in some of the leading school systems of the country.

Two excellent collections of curricular materials may be found at the A.S.C.D. headquarters in Washington, D. C. and the University of Chicago Curriculum Laboratory. If it is impossible to send a representative to these places to gather information, then plans should be made at once to send letters to many school systems throughout the country to purchase copies of their courses of study.

About the middle of the first year, the vertical committee should be expanded to include about twice its original representation. This will allow for more exchanging of notes and sharing of ideas as the course of study is developed.

By the end of the first school year, the enlarged vertical committee should have decided upon (1) the philosophy for teaching the subject; (2) the general objectives for teaching the subject; (3) the specific objectives for teaching the subject at each grade level; (4) the concepts to be taught at each grade level; and (5) the instructional materials for this subject from elementary school through the secondary school.

From this point on, three major subcommittees, under competent leadership, will determine the exact content of the course of study. Specifically, this means that the elementary chairman with his committee expanded to three or four teachers per grade level will spend four, five, or six weeks in the summer, reviewing the material that the co-ordinator has gathered and determining exactly how much can be taught at each grade level.

Once progress in writing the course of study has reached the point where certain aspects of the program have been developed from the kindergarten through the sixth grade, an editing committee, consisting of four or five teachers, can be selected from the group to determine continuity in the program and the extent to which co-ordination still must be done.

Working from the general outline that was agreed upon by the vertical committee, the junior- and senior-high-school courses of study can be developed simultaneously. However, some administrators prefer to have the secondary teachers serve as consultants until the elementary portion of the course of study has been completed. There also is need for over-all committees, drawn from the vertical committee, to determine continuity in the total program. For example, if the geography aspect of the social-studies program starts in the fourth grade and continues through the eleventh grade, some means of co-ordination must be established. If plans are to stress home, school, and community in the primary grades, this must be reviewed by a co-ordinating committee at that level and integrated with the fourth-grade program.

In regard to the question of bringing all elementary teachers and secondary teachers into the planning of the course of study, a two-year project is advantageous, for, with this longer period of time, grade-level meetings may be held during the second year to get the reactions of the general staff. In many cases, this method is preferred, for, now, many valuable suggestions will be made to strengthen the course of study.

In addition to this, each member of the staff who teaches the subject being studied will feel that he has had an opportunity to make suggestions.

Values and Conclusions

Nothing can give an inexperienced teacher a feeling of security so well as a carefully prepared course of study in each subject she is expected to teach. At the same time, every teacher, regardless of her experience, at times has wondered if she were covering the "essential" material in her subject.

The vertical curriculum committee has not finished its job when the course of study has been planned, edited, and written. The next steps of this committee are (1) to select materials to fit the course of study; (2) to develop in-service-training classes for the teaching of this subject; and (3) to review and re-evaluate this course of study from year to year.

What should the course of study contain after the job is done? Primarily, it should contain the minimum essential concepts that the committee has agreed should be taught in the subject at each grade level. It also should contain many different kinds of activities that will help the teacher to decide how to teach the concepts of a subject in an interesting manner, as well as many kinds of *live* references. Moreover, it should contain a statement of the major problems of the subject at each grade level. And, finally, it should contain any other helps that the committee desires to include. Above all, it should be understood by all staff members that the course of study basically outlines *what* the teacher should teach, not *how* she should teach.

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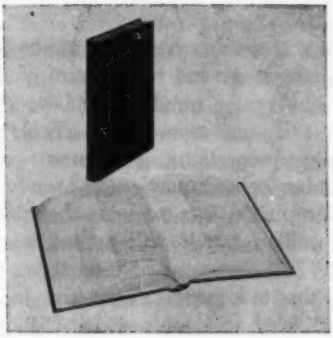

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Who Is the School Counselor?

GOLDIE RUTH KABACK
Associate Professor, The City College School of Education
New York City, N. Y.

CITIZENS throughout the country are becoming more and more aware of the fact that great numbers of boys and girls will soon crowd our schools to bulging proportions. Elementary and secondary schools now enroll over forty million pupils; it is expected that sixty-five million pupils will attend school by 1975. Conservative estimates suggest that education above the high-school level will increase by 150 per cent during the same time.

With the anticipated increase in school enrollment has come an intensified interest in the expansion of school guidance and counseling services. It is the purpose of this paper to discuss briefly who the school counselor is and what he does at the present time as preliminary to what he will be called upon to do by 1975.

Historical Trends

Perhaps it might be well, at the outset, to indicate some of the major influences that have shaped and continue to shape the guidance and counseling movement in this country.

1. Demands for new skills and techniques have increased tremendously since the Industrial Revolution. At the same time, there has been an ever increasing body of scientific knowledge. The present age of automatic production and specialization demands a scientifically and technically trained labor force that is more proficient and qualified than ever before in the history of mankind.

The school counselor must know about these trends in order to prepare young adolescents for the world of work.

2. Child labor laws, the shift in population from rural to urban centers, the mechanization of farming during the past number of years—all have contributed to personal and vocational problems that the young adolescent may not always be able to solve for himself.

To transmit knowledge of how best to meet these problems is the function of the school counselor.

3. Not long ago, only the few who expected to go into the professions or the ministry were encouraged to complete a secondary-school education. In 1900, about 10 to 15 per cent of the adolescents completed a high-school education; today about 50 to 70 per cent of the boys and girls who enter high school remain to graduate. In 1900, 4 per cent of the boys and 1 per cent of the girls were enrolled in courses of study beyond high school; today 22 per cent of our boys and 12 per cent of our girls go on to college—and the number is growing rapidly.

The present school counselor is called upon to answer many questions related to high schools and courses of studies, colleges and entrance requirements.

4. Socio-economic changes have led to changes in status needs. Parents, for

the most part, are no longer content to have their children enter the vocational milieu which they themselves have occupied for many years. They want their children to have more schooling and to attain positions on the uppermost rungs of the occupational ladder.

It is the school counselor who sometimes must meet with parents and try to reconcile their hopes and aspirations with the realistic abilities, aptitudes, and interests of their children.

5. The improvement and expansion of school guidance and counseling services also stems from the fact that a society interested in the welfare of its citizens provides educational and vocational opportunities for the maximum development of abilities and aptitudes. Public Law 85-864, the National Defense Education Act of 1958, is but one example of such interest.

It is the school counselor who is called upon to guide young people into the area of study and work that society has provided.

6. Finally, heightened interest in guidance and counseling services at the present time is related to a deeper understanding of individual needs, drives, and motivations.

Since the school counselor has been trained to understand psychological problems against a background of changing socio-economic conditions, it is usually he who assists students to adjust to the demands of a complex society and to actualize their unique and creative potentialities.

Elementary School

The elementary-school counselor is usually a woman who has taught in elementary schools for a number of years. There are many women who also serve as school counselors in the junior high school and in the senior high school, but in recent years many more men than formerly have been drawn into this field. A teacher's interest in the area of guidance and counseling may stem from his work as a grade adviser, a relationship with an atypical child, or from an arbitrary assignment to the guidance office by an administrator.

There are no uniform state requirements for the certification of elementary- or secondary-school counselors. Each state or local community may set up its own specific educational and experiential requirements. Usually, however, one or two years of work experience in addition to two or more years of classroom teaching are required. In addition, the school counselor frequently may be called upon to offer proof that he has completed specific courses in guidance and counseling beyond the baccalaureate degree.

The elementary-school counselor works very closely with teachers in order to help them to create proper psychological climates and special courses of study for particular pupils. She meets with teachers to obtain information about children who have been referred to the guidance office, and she shares information with teachers about test results and interview sessions.

In addition to her work with individual children, the elementary-school counselor frequently organizes group activities for selected children in order to help them to overcome aggressive or withdrawn behavioral tendencies. She also may schedule definite appointments with parents on matters pertaining to specific problems of child adjustment or referral to some community agency.

She may arrange for PTA discussion on child growth and development and work with other school services for a more effective guidance program.

Junior High School

One of the major functions of the junior-high-school counselor is to help young adolescents to begin to think more critically about the relationship between abilities, present ambitions, and future goals. Since the junior-high-school curriculum often is more differentiated than the elementary-school curriculum, the school counselor usually is called upon to help adolescents plan programs of study that will contribute most to the kind of persons they hope to become and to afford them opportunities to discuss themselves in relation to their expanding social horizons.

Teachers' observations of classroom behavior, class achievements, extracurricular activities, and the like are utilized by the school counselor in his work with individuals or with groups of junior-high-school youth. In his counseling interview with the student, he tries to determine the relationship between the student's own concept of his abilities and parental pressures for achievement. Throughout, the aim of the junior-high-school counselor is to enable each student to develop techniques which will enable him to become more mature and self-directing.

Senior High School

The duties of the senior-high-school counselor usually include orienting new students to the school curriculum, testing and appraising scholastic and special aptitudes, counseling individual students with respect to problems of achievement, appearance, boy-girl relationships, and parental attitudes.

The major focus at this level, however, is on helping adolescents attain educational and vocational goals that are commensurate with their interests and abilities. Toward this end, the school counselor frequently organizes group guidance sessions in co-operation with school club leaders or homeroom teachers. He enlists the help of the school librarian to assemble and maintain files of educational and vocational information. He ultilizes films, speakers, and visits to schools and industries in order to acquaint students with the realistic aspects of the world of work. Under his direction, students frequently conduct surveys of occupational opportunities available to them in their respective communities and interview potential employers with respect to personal characteristics and technical competencies.

The senior-high-school counselor is well informed about college requirements, loans, and scholarships. He usually is responsible for college and career conferences, wherein he tries to bring together qualified college and industrial representatives to answer students' questions. He collects information about students from teachers and, in turn, works with teachers in order to have them develop a deeper understanding of adolescent needs. He interviews parents about the adjustment or aims of particular students and he discusses the health of adolescents with the school nurse or the school doctor. He is very well acquainted with the community resources, and he refers out those boys and girls who need physical and psychological assistance not available at the school.

Culture, Why Lag?

THOMAS M. WEISS AND MARY SCOTT MORRIS
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CULTURAL lag may be defined as the period of time that obtains between the discovery of new knowledge and its general acceptance by a society. That the period of time is usually significantly long is often overlooked by people in both education and science. That those in the former category (educators, *per se*) fail to take into account this new knowledge is understandable, since they are frequently plagued with a host of trivia for which they are held responsible. Those in the latter category (scientists) frequently operate individually, sharing their information with others only after evidence is available. Usually they do not pool ignorance. Nonetheless historical examples indicate that a cultural lag occurs in science (albeit to a lesser degree), just as it does in other areas. Let us look at some of these.

Historical Lags

Galileo was not the first to suggest re-examination of previous truths as a consequence of empirically observable contradictions, but he is perhaps the best remembered. The natural scientist has applied his methods for years; yet after nearly four hundred years neither educators nor lay citizens do. Nor do scientists outside the laboratory. One wonders why methods fruitful in the laboratory are not equally fruitful outside.

Two hundred years after Galileo, certainly, his methods were still not used by the physicians of the French Academy of Science when Pasteur demonstrated empirically that wine fermented as a consequence of organisms in the wine and that a bacillus was the cause of anthrax. Eighty years elapsed between Jenner's first proposal of the principal of artificial immunization and Pasteur's observation leading to a vaccine for anthrax. The scientist Jenner was obliged to publish at his own expense his findings on the relationship between cowpox and smallpox after the Royal Society in England rejected his discovery in 1798.

It is interesting to note that Pasteur recognized that air-borne micro-organisms, contaminating his cultures, interfered with their growth. This fact, together with the earlier discovery of Penicillium by Link in 1824 could have opened the field for antibiotic medicine six decades earlier. That these discoveries did not lead directly to this area may be attributed to an exaggerated respect for medical scientists—particularly Metchnikoff.

Often such exaggeration operates to prevent examination of new evidence in an impartial light. "After all," authority says, "why should we listen to unknowns when the words of the master are at hand?" Perhaps this attitude on the part of those who control publications and grants for research and educational offerings explains in part the cultural lag in science. One wonders

whether the present de-emphasis of the Pavlovian theory may not operate to limit man's understanding of the learning process. If for sixty years Metchnikoff's refusal to consider that "bacterial products share in the elaboration of antimicrobial substances" prevented rigorous investigation of the possibility, then there is no reason to believe that current attitudes of psychologists toward Pavlovian hypotheses may not do likewise.

A noted German bacteriologist sixty years ago *believed* he had found a bacillus responsible for influenza. His position of prestige was such that no one questioned his "discovery" for a quarter of a century. Fortunately for mankind there are always a few who realize that even the "great" may err. Following this man's strong lead, others were busy looking for a causative bacillus (which wasn't there), and a few demonstrated influenza was caused by a virus. The "noted" leader may influence his contemporaries, but his leadership should not close other avenues of research.

It is almost inconceivable in the light of the present fine communication that exists between men of science to note that the work of Dr. Carlos Finlay was completely ignored by his fellow scientists for two decades. Finlay had established without question, as early as 1881, that mosquitoes transmitted yellow fever. His findings had been reported to the medical world and then allowed to "gather dust." Countless hours were expended, many lives were lost uselessly, and large sums of money were wasted, endeavoring to find what had already been clearly presented. Is it possible that a minimum of twenty years is needed before empirical evidence can be objectively examined? We seriously doubt it!

All of the preceding examples indicate the appalling lag between discovery of scientific fact and its integration with accepted theory. A final example of this slow motion is illustrated by remembering the dreaded disease termed "Black Death." Despite the fact that this horrible plague was a killer of the first order, recurring periodically to depopulate sections of the world, the empirical and easily observable relationship between increase in rat population and increase in incidence of the plague was overlooked for more than a thousand years.

Science has always dealt with things, processes and events both qualitatively and quantitatively. Its dispassionate form of inquiry tends toward minimizing the lag between new discovery and existent theory. Nonetheless as we have seen, lag occurs in science. In areas other than science one would expect greater lag because the areas of investigation and concern are frequently less empirical. It is difficult to demonstrate as forcefully the validity of one idea as opposed to another when these ideas are not based on empirical processes. But on close inspection one finds that seemingly nonempirical ideas can be examined by the methods of science. Let us consider a few.

Scientific Examination

First of all there was the belief that there are races of men and that some hierarchy from superior to inferior exists. So long as society believed this, serfdom, slavery, and even murder were legitimate. For example, the "moral" white Christian thought it perfectly defensible to wage war against the "inferior," "savage" Indian. Today it is considered immoral to wage bacteriological

warfare, but some of our forefathers overlooked this point when they sent "gifts" of blankets infected with smallpox virus. Races as such are nonexistent except as convenient anthropological categories. This has been known for at least fifty years and has been emphasized by Malinowski, Meade, Whorf, and others. There is a human race but not much *humanity* when we consider discrimination, prejudice, and the like. To know that all men are human while at the same time treating some of them as animals demonstrates a profound lag between anthropological findings and cultural behaviors.

Cultural Lag in the Fine Arts

Cultural lag may also be noted in the realm of the so-called "Fine Arts." Composers who are ahead of their day must wait for public acclaim and recognition. Debussy's compositions were for the most part too impressionistic for audiences of his day, though by now few consider the harmonies of "Clair de Lune" strange or weird—instead its popularity is shown by applause and murmurings of approval when it is played as encore material. In art, as in music, masterpieces were relegated to dim garrets or stacked away as payment for a much-needed meal because the artists' unusual styles or unorthodox color combinations did not comply with the academy prerequisites.

Fame and fortune had to take a back seat while time softened the ground. Attitudes and evaluations must slowly take on different forms so that acceptance comes too late for the living; given time, however, the artists may acquire their proper niches fifty or a hundred years later. Ryder, Blake, and Van Gogh are among those masters in the world of painting who had the unique urge to create without public acclaim and might be termed far ahead of their contemporaries. Today their work is an important adjunct of leading art galleries throughout this country. The high monetary value, which time and reversed judgment values have accorded their works, gives further evidence to the charge that fame and fortune must apparently await its "proper hour."

Why is man so prone to continue with his "known" facts and stubbornly refuse to accept that which is new? Even theories empirically proven may of necessity have to remain dormant until the time is ripe and acceptance is affirmed. To be aware of need yet to sit passively by, unmindful of action, because it may entail investigation of these new ideas, seems a strange way to meet the situation, a peculiar attitude for dealing with a changing world.

Why should fifty years or more be necessary to bring the "new" to public acceptance? Will the cultural lag never pick up the slack and keep abreast of the times? Contemporary innovators are too often considered ahead of their days. People seem loath to keep up with the pace, preferring to ignore new ideas, or regard them as "crackpot," fantastic and impossible, despite proof to the contrary. Is this modern lethargy the fault of the educators? Have our educators failed to instill the spirit of inquiry? Eagerness to explore, to be different, to produce original ideas and to investigate zealously needs to be inculcated in our youth so that awareness is not confined to the "accepted" but allowed free imagination for growth and creativity. Only then can we expect our culture to stride forward, keeping step with the age.

Leaders in Education XXIV

ALLAN M. WEST

TEACHERS win victories for education in the classrooms; scientists win victories in the laboratories; but it takes an Allan West to win on the battleground of the legislature. Meet a warrior whose cause is children, whose victory is good law.

This warrior for good schools is a mild man: soft-spoken, unruffled by adversity, quiet in his persistence, and modest in victory. With the help of twenty loyal workers at the headquarters of the Utah Education Association, he delivers accurate facts to the right people at the right time.

Allan West was a business major at Utah State University. After graduation, he served as research director of a "Committee of Nine," investigating delinquent taxes, causes, and cures. While working in the offices of county treasurers, he saw teachers standing in line at the windows with tax anticipation warrants, trying to collect enough money to stay alive. This pitiful scene sparked his determination to make education a dignified profession, worthy of free children born in a free land.

Today, Utah teachers can walk with pride into their own three-story building, knowing that not only is it paid for, but also it is managed by an executive secretary who practices what he believes, in providing good buildings for children, good pay for teachers, and a good curriculum in every school.

Allan West's influence is widespread. He now is serving as vice-president of the National School Public Relations Association and as chairman of the Public Relations Committee of the Secretaries of State Teachers Associations. He has served the National Education Association as member and chairman of its Committee on Bylaws and Rules.

Thanks to this beloved and valiant worker, generations of Utah children are better educated to meet life, and thousands of teachers are better prepared to help them. He is a success at his business, and, to paraphrase Dickens, "Mankind is his business."

LORIN F. WHEELWRIGHT
Salt Lake City, Utah

WHAT SCHOOLS ARE DOING

Board of Education Handbooks

GUY WAGNER
Director of the Curriculum Laboratory
Iowa State Teachers College, Cedar Falls

An Open Letter to
School Board Members:

IT is impressive to realize that every action taken and every decision made by the school board are clearly related to the policies under which the board operates. These actions and decisions conform with or modify a present policy, establish a new policy, or, perhaps unwittingly, violate an established policy.

The tremendous importance of school-board membership in the life of a community is seldom recognized by the lay public. But this importance exists. And, because a school board is such a significant community organization, it should operate within the pattern of carefully conceived and clearly stated policies.

Suppose we ask a few questions: (1) At what age should a child be permitted to enter kindergarten? (2) Who should interview and recommend for employment teachers, custodians, and clerical workers? (3) Should varying types of diplomas be given to students with varying high-school programs and achievement levels? (4) May free and inexpensive teaching materials produced by business, industry, and government be used in your classrooms? The answers to all of these questions are matters of policy.

The writer of this column, having served in several administrative capacities in public school systems, has developed a great respect for the office of the school-board member. He has learned that board members who meet their responsibilities fully must be men and women of integrity, intelligence, emotional maturity, sagacity, and intellectual honesty. Communities hardly can be expected either to understand or to appreciate fully the efforts, personal sacrifices, and talents of truly effective school-board members.

But school-board members work as part of a team, and any good team must have certain established guidelines within which its decisions and actions take place. Without such guidelines, rather than order and progress, disorder and inefficiency are likely to result. It is for this reason that school boards, even those which are best intentioned, should have a well-organized and complete set of policies under which to plan, deliberate, decide, and act.

School systems which have developed excellent policy handbooks include those in Osage, Reinbeck, and Keokuk, Iowa; Glenco and Peoria, Illinois; Chico City, California; Ogden, Utah; Amsterdam, New York; Chapel Hill, North Carolina; Port Arthur, Texas; Burlington, Vermont; and Baltimore, Maryland.

VIEWPOINTS

Givers and Takers

EARL H. HANSON
Superintendent of Schools, Rock Island, Illinois

BETTY SMITH, famous for *A Tree Grows in Brooklyn*, a few years ago wrote a book called *Maggie, Now!* It's a wonderful story of a little girl, the daughter of an Irish immigrant. She was called Maggie Now because, when she was little, her parents continually scolded, "Maggie, now, don't do this; Maggie, now, don't do that." Being Irish and Catholic, she went to the nuns' schools. She wasn't a very good student, but everyone liked her.

One day a couple of sisters were talking about Maggie Now. One said, "I like to take Maggie Now shopping with me. She seems to like me. She wants to help, and she's so considerate of everyone we meet." The other said, "Yes, Maggie Now is a giver." The first was thoughtful for a minute and then said, "That's true, and Maggie Now is going to be very busy all her life because for every one giver, there are ten takers."

The nun sadly was right. I'm afraid for our country unless somehow the proportion can be changed. Takers, at the least, are pests; and ruthless takers are dangerous. In a rich and comfortably populated community where there is enough of everything to go around, where everybody knows everybody else, and where everyone is a real person, not just a faceless creature, takers are mainly pests—not very dangerous. When there are so many people that individuals don't count for much and things needed to sustain life must be shared by many, takers are threats to everyone. They turn the community into a jungle.

Certainly the United States, comfortably populated and richly blessed, so far, can hope to live up to its belief that every person is sacred and should be given, when young, what he needs to make the most of himself. There aren't too many of us. But it's going to be more difficult as the decades pass; we are becoming crowded and, eventually, we may teem as India teems.

To keep the American doctrine alive, we must change the proportion of givers and takers.

Such change is possible, for, in every child, there is a little of giver and a lot of taker. He gives trust to his parents, and he takes what he needs.

If we assume, as we must, that our country will be crowded and wealthy, we have to emphasize giving. We shudder at the alternative—that is, that the world will be sparsely populated by savages, that culture and wealth will be destroyed by atoms. Of course, if that is what really will happen, we should keep right on making ten takers for every one giver.

THE EDUCATIONAL FRONTIER

Education for the Atomic Age

FRED G. WALCOTT
University of Michigan, Ann Arbor

I HAVE just spent several hours visiting with an official of the Phoenix Memorial Project, an immense experimental program at the University of Michigan, devoted to the peaceful uses of atomic energy. The most impressive outcome of our conversation was his demonstration of the obsolescence of American education because of the new habits of thought required by a new era of human activity. In one experiment alone, on the physiology of plants, he said that six men are engaged, only one of whom is a botanist; the others are an anthropologist, a chemist, a physicist, etc. The point he made is that men are now called upon to do *new* things; that previous training of a knowledge-gathering kind cannot even come close to preparing for the new demands; that the one thing needful proves to be an ingenuity in contriving new ways of getting things done.

The Phoenix Laboratory, he said, is, in fact, a *contrived* sort of institution; it was built according to the perceived needs of men engaged in dreaming up new ways to experiment. In this business, it is the inventive imagination that counts. And it is right here, he said, that the obsolescene of present-day education shows up most painfully. Traditional assumptions have been that one learns his facts first; then he starts to do things. Schools devote themselves to a preparatory function — inculcating knowledge (facts, tables, systematized relationships, taxonomies). My visitor was most vehement at this point: to begin with, *memoriter* learning is worse than merely futile; it does something to the mind—it atrophies the imagination, it leaves undeveloped the very ingenuity in contriving that we need.

Does this mean that knowledge is no longer prized? Of course not! It means, rather, that amid the action of contriving, we seek the knowledge necessary to our present purpose. It means that knowledge is acquired in the midst of an inspired seeking for it and as a function of its application to a pressing need. It means, even, that one comes in time to realize the value of the taxonomy, and masters it then (by *memoriter* effort, so be it!) because its practical values are now so obvious.

My informant made another comment that electrified me. He said that John Dewey had anticipated the educational needs of this new era, that he had enunciated the kind of creative learning that the world will find so critically in demand. He said, in fact, that the activity movement, the simple method of learning by doing—which is really the way of science—has come to stand as our great national need.

BOOK REVIEWS

WILLIAM P. SEARS, JR., Book Review Editor
New York University School of Education
Washington Square, New York City

ONE GREAT SOCIETY. By Howard Mumford Jones. New York, N. Y. Harcourt, Brace. 1959. $4.50.

Howard Mumford Jones, Professor of English at Harvard University, presents a strong and valid plea for the humanities in this honest and forthright book. It is the humanities —philosophy, history, literature, music, the arts, and languages—that give purpose, beauty, and value to life, avers Professor Jones. Alas, he points out that today universities, businesses, industries, philanthropies, and the government are almost totally preoccupied with technology and the competition for world leadership. Dr. Jones contends that men must understand themselves before they can lead others. Human understanding alone can keep America great and free, and such understanding must be based on reason, art, and knowledge. Dr. Jones supports his position in his usual crisp and intelligent manner.—W. P. S.

ANGLO-AMERICAN FOLKSONG SCHOLARSHIP: SINCE 1898. By D. K. Wilgus. New Brunswick, Conn. Rutgers University Press. 1959. $7.50.

This scholarly and informative book grew out of the author's doctoral dissertation, the problem of which was to show the interests and accomplishments of twentieth-century folksong scholarship. The concept that the folksong is a spontaneous expression of the "collective soul" of a people is the central theme of Dr. Wilgus' study. The author traces this concept, its effect upon scholarship, and the conflicting schools that have arisen from it. There is full discussion of the literature of the ballad and of those who have studied this area of our culture.

—W. P. S.

THE SABRE-TOOTH CURRICULUM. By J. Abner Peddiwell. New York, N. Y. McGraw-Hill. 1959. $1.50.

It may seem strange to see a review of such a famous book as *The Sabre-Tooth Curriculum* appearing in the columns of *Education* at this late date. Suffice it to say, that this satire now is available in a paperback edition.

—W. P. S.

MODERN SCIENCE DICTIONARY. Compiled by A. Hechtlinger. Indianapolis, Ind. Bobbs-Merrill. 1959. $10.00.

This is truly a must for every school and for every home in which young scientists are growing up. The compiler is himself a teacher and a member of the faculty at New York City's celebrated Bronx High School of Science. The dictionary is a very complete one, and the terms are defined in clear, simple, and accurate fashion. As a ready source of reference, the *Modern Science Dictionary* will help keep up our science literacy.

—W. P. S.

THE STORY OF EARLY MAN. By H. E. L. Mellersh. New York, N. Y. Viking Press. 1960. $4.50.

This is the story of the long, slow transition from food-gathering to hunting and agriculture, the birth of language, the flowering of art, the natural bases of magical practices, the growth of religious beliefs, the spread of crafts, the gathering of populations into villages, and the push from the fertile valleys of the Near East to Europe and Asia. Such subjects, it is obvious, are extremely important and Mr. Mellersh tells his story with zest and authority. Many line drawings add to the smoothly flowing text. An excellent book for school and home libraries.—W. P. S.

HELPS FOR BUSY ENGLISH TEACHERS

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